DECEMBER 11, 1950 NEWS ISSUE

Electrical World

A McGRAW-HILL PUBLICATION

George H. Flagg, New President of the National Association of Railroad and Utilities Commissioners

National Power Show . . . Page 16

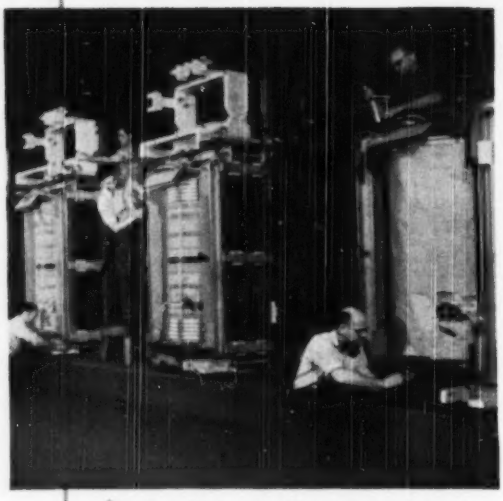
Manpower Is Getting Critically Short . . . Page 30

Saved!

$1950.00

and 10 weeks

on 2 transformers



*Here's an RM (meaning "Repetitive Manufacture") assembly line. By using standardized construction methods, General Electric builds these RM power transformers more economically—delivers them faster. Listed RM ratings are available up to 10,000 kva and 69 kv, with many optional features.

how RM* made this possible

The Customer's Specifications

—Two, 3-phase transformers
—1,000 kva each
—High voltage: 22.9 kv
—High voltage taps: two 2½% above and two 2½% below 22.9 kv
—Low voltage: 5040/8720Y-volts with ±10% Automatic Load Ratio Control
—Impedance: 6%
—Oil preservation: Sealed tank
—Special features: provision for future fans; self-contained power supply for LRC.

Our Quotation

Price—$26,516 net
Shipment—23 weeks

Our Alternate Quotation

on RM-standard transformers
Price—$24,566
Shipment—13 weeks

Here's a case where RM specifications matched the customer's original specifications, with only 2 minor variations: RM high-voltage taps were 24,100/23,500—22,300/21,700 (within ¼% of specified taps!). Also, the power supply for LRC was not self-contained—which actually proved preferable for this application.

Customer bought RM, saved nearly two thousand dollars—received faster delivery.

Before you buy your next small power transformer, investigate RM. If standardized transformers can fit your needs—*you, too, will save.*

Ask for catalog GEC-479. Apparatus Dept., General Electric Company, Schenectady 5, N. Y.

GENERAL ELECTRIC

401-12

The Electrical Week

IN WASHINGTON—The long-awaited order establishing the Defense Power Administration was signed by Interior Secretary Oscar L. Chapman Dec 4 (p 6) . . . REA has approved another of its controversial "lend-lease" federal power programs in the Southwest (p 6) . . . A second meeting of the Electric Utility Defense Advisory Council is scheduled for Dec 14 (p 11) . . . Two staff members have been appointed to the power equipment division of the National Production Authority (p 12) . . . FPC has given the Department of Interior more time to file its exceptions to the examiner's decision on Roanoke Rapids (p 13) . . . And regulated public utilities are going to get special treatment in the excess profits tax bill (p 14).

ELSEWHERE—Canadians are showing more than idle interest in the Shawinigan Water & Power Co's La Trenche project, since more power will mean more industry (p 4) . . . There will continue to be "enough power to meet anticipated needs" if the electric utility industry is permitted to continue its expansion program, Charles E. Wilson, General Electric Co president, declared at the National Press Club in Washington Dec 5 (p 11) . . . A group of rural electric cooperatives in Mississippi may receive wholesale power at a low, ten-year rate, despite REA's policy of approving power contracts for no longer than five years (p 11) . . . And thousands of products, many of them officially announced for the first time, were on view at the 19th National Exposition of Power and Mechanical Engineering in New York Nov 27 to Dec 2 (p 13).

• • •

The Securities and Exchange Commission reports that electric, gas, and water utilities offered $444 million worth of new securities during the third quarter of this year, compared with only $308 million during the third quarter of 1949. Total offerings for the first three quarters, however, trail 1949 figures—$1,326 million, compared with last year's $1,491 million for the first nine months.

Interior's Defense Power Administration isn't the only new defense agency which has been having trouble filling its top jobs. When Mayor Michael V. Di Salle of Toledo was named director of price stabilization, it was reliably reported that the job had been declined by no less than 40 other persons.

Algeria will spend the equivalent of more than $34 million in Marshall Plan counterpart aid this year to build dams and steam plants and modernize its coal mines. The North African nation still has a power shortage, despite the fact that output has jumped from 288 million kwhr in 1938 to 510 million kwhr last year.

Detroit has the nation's first major fluorescent street lighting system. Placed in operation by the Detroit Public Lighting Commission, it covers a half-mile stretch on Wyoming Ave, one of the city's main thoroughfares.

Use of cobalt is running ahead of new supplies. In fact, more cobalt was used in the first three quarters of 1950 than in the entire year of 1948.

The Federal Trade Commission has announced officially that it's "investigating" the controversial "child-appeal" advertising campaign of a TV industry group.

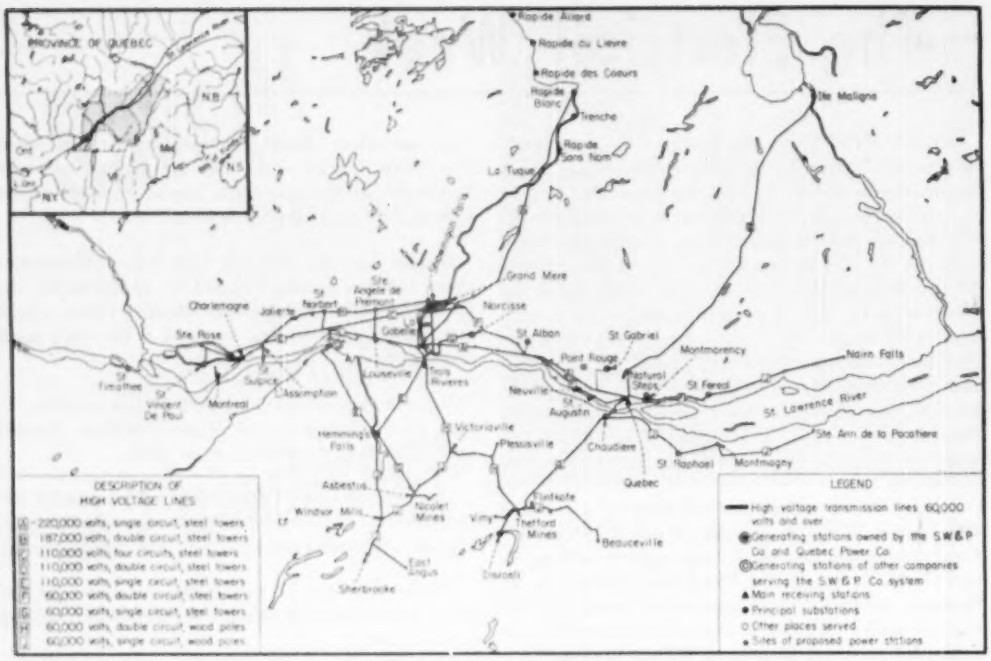
Phillips Petroleum Co will operate the Atomic Energy Commission's new materials testing reactor which is being built in Idaho.

El Paso Electric Co is boosting home ownership of its stock. In 1947 in number of shares owned and of shareholders Texas ranked ninth among states. Diligent efforts on the part of the company has raised Texas to second place in both classifications.

A new proposal to bring natural gas to the Northwest has been made by Westcoast Transmission Co. The company, associated with a Canadian company of the same name, has applied for an FPC license to supply the Northwest with gas from Alberta. Construction in the United States would include more than 600 miles of pipe lines, cost more than $25 million.

Notes From The News

Brockton (Mass.) Edison Co's East Bridgewater steam plant is being provided with additional cooling pond facilities to hold about 3.5 million gal of water. Together with previous facilities this will enable the plant to generate 20,000 kw for long periods pending the installation of a new 60,000 kw steam unit at the system's plant in Somerset (Montaup Station) . . . Telephone communication between the Gorge and Diablo hydroelectric plants of Seattle City Light, along a line frequently knocked out by slides, will be replaced by a two-way microwave circuit. The beam will have 10 channels, which can be increased to as many as 23, for telephone, telemetering, load control, and teleprinting.



MAP shows location of principal power plants of Shawinigan system, and insert map the part of Quebec Province served

Shawinigan Growth to Aid Industry

Canada's Largest Investor-Owned Company Centers Hydro Projects in St. Maurice Valley; Trenche Plant Will Go on Line This Month

Sometime this month Shawinigan Water & Power Co will put into operation the initial units of its La Trenche project. By spring of 1951 La Trenche will have in operation its five units with a total capacity of 325,000 hp.

For Americans this is probably only an interesting note. For Canadians, those in the Province of Quebec, this will be a much more important event. Shawinigan is the company that produces most of the province's power. And since most of this power goes to industry, more power means more jobs.

Americans who usually are quick to admire greatness can well afford to look at Shawinigan and its activities. To begin with Shawinigan operates the largest privately owned hydro system on the continent. With its subsidiary companies and including the Trenche project it has an installed capacity of 1,682,325 hp. What is more important, it still has sites on which it can erect plants with a total capacity of 802,900 hp. Probably within the next decade all of this capacity will be in operation.

Furthermore Shawinigan is the biggest investor-owned company in Canada where the provincial governments have been setting up power commissions and taking over private companies and their operations.

There may be some good reasons for Shawinigan's survival. For one thing, it is a "home-town" company. Of 4,439 preferred shareholders only 48 live outside of Canada. There are 2,324 in the Province of Quebec and 2,067 in the other provinces. Of 21,150 owners of common 9,935 live in Quebec Province, 4,348 in other provinces, and 6,867 outside of Canada. Its main power subsidiary, Quebec Power Co, has an even better record. It has 2,654 common shareholders in Quebec, 332 in other provinces, and 352 outside of Canada.

The French population which plays such a big part in the Province of Quebec also plays a big part in the operation of Shawinigan. Since the French still are devoted to their mother tongue, the company prints most of its literature in both English and French. The employees' house organ. *Shawinigan Journal,* is one publication so printed.

And Shawinigan's power rates are the kind that win friends. Urban rates, the lowest of four residential classifications, are 2.8¢ per kwhr for the first 50 kwhr, 1.5¢ per kwhr for the next 150 kwhr, and 1.1¢ per kwhr for all excess usage. This means 100 kwhr a month cost only $2.15. Suburban, interurban, and rural users pay more, but the rural user pays only $3 for 100 kwhr a month.

Actually, the story of Shawinigan

THE TRENCHE PROJECT appeared as above before final closure of the dam. Water is flowing through the openings in the by-pass section halfway up the dam. Construction plant is at left center, the town site on river bank at extreme left

is the story of a river, the St. Maurice. As rivers go it is not a big river. Its length is only 240 miles. Its flow is not great, only 20,000 cfs. The area that is drains is not large, only 16,000 sq mi. But its fall is 1,300 ft in 240 miles. And this fall is what Shawinigan has put to work.

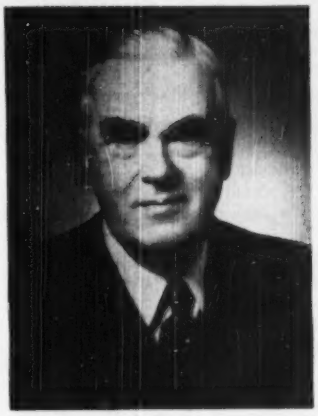
At six sites on the river, the company will have installed when the Trenche project is completed 1,640,600 hp of capacity. There is sufficient water to make further installations of 174,500 hp economically feasible. At four other sites there is a potential of 620,000 hp.

In addition the company has these three hydro plants Disraeli on the St. Francis River, 4,000 hp; St. Alban on the Ste. Anne, 4,000 hp; and St. Narcisse on the Batiscan, 22,200 hp.

Quebec Power Co, a subsidiary which serves Quebec City and the eastern part of the province, has six hydro plants with a total capacity of 41,725 hp and could add another 8,400 hp.

Shawinigan is half owner of the St. Maurice Power Corp and operates its big station at La Tuque as part of the Shawinigan system.

There are also a number of other subsidiaries in other fields. These include Shawinigan Engineering Co, a



JAMES WILSON
Shawinigan's President

hotel company, a building company, and two transportation companies which are direct subsidiaries of Quebec Power.

But the biggest subsidiary is Shawinigan Chemicals, Ltd, which has a number of subsidiaries of its own including some in the United States.

Shawinigan is a heavy supplier of industrial energy and will play an important part in any rearmament program of the Canadian government. Its first customer in 1908 was an aluminum company which is still operating. Paper and chemical companies are big users of power.

In 1949 of some $25 million in sales, all but approximately $10 million came from industrial sales. Of this $10 million only $5,813,451 came from residential, farm and commercial customers; the remainder came from wholesale sales to other utilities and municipalities.

Including the customers served by Quebec Power Co Shawinigan had 258,795 customers at the end of 1949. These were classified as follows: Industrial, 3,251; reesidential, 180,279; farm, 44,066; commercial, 12,162; general service, 19,031; and other retail distributors, 6.

This represents a considerable increase over 1947 when the total was 218,923. Much of this increase was in residential and farm customers. The company has been pushing electrification in rural areas. This is very important if new industries are to attract and keep workers.

Shawinigan's future seems to look most promising in the industrial field. In its area, rich in natural resources, industry is growing rapidly. And Shawinigan has just what that industry wants—plenty of cheap power.

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MEMBERS OF THE ATOMIC ENERGY COMMISSION pose with Senator Brian McMahon of the joint Congressional Atomic Energy Committee as they arrived at the capitol for closed-door report on atomic progress. In group are, left to right, Thomas E. Murray, Henry D. Smyth, Senator McMahon, T. Keith Glennan, AEC Chairman Gordon Dean, and Sumner Pike

DPA Is Set Up; Its Head Will Report to Chapman

The long-awaited order establishing the Defense Power Administration was signed by Interior Secretary Oscar L. Chapman Dec 4. Under the order, DPA is to have an administrator "who shall be appointed by the Secretary of the Interior and who shall report and be responsible directly to the secretary."

The administrator may not be appointed for several weeks. Chapman offered the post to Edward W. Morehouse, vice president General Public Utilities Corp, on Nov 22, but Morehouse has indicated to Interior that he will not take the job. Meanwhile, D. L. Marlett, assistant administrator of the Bonneville Power Administration, is continuing to serve as acting DPA administrator.

Although a broad delegation of authority to the new administrator might be made, the order setting up DPA was not final on that score. Chapman reserved to himself 11 separate powers, including "the approval of all industry orders, and amendments . . ." and "the approval of major policy or program actions which the administrators propose to take."

In addition to clearing the way for appointment of an administrator, the formal establishment of DPA will give the agency full-fledged federal status and permit it to organize and hire personnel.

The order creating DPA also set up three other Interior defense agencies —Defense Minerals Administration, Defense Solid Fuels Administration, and Defense Fisheries Administration. A fifth Interior defense agency previously set up is the Petroleum Administration for Defense, established Oct 3.

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Southwest 'Super Co-op' Is Granted REA Loan

The Rural Electrification Administration has approved another of its controversial "lend-lease" federal power programs in the Southwest.

Arkansas Electric Cooperative Corporation, Fayetteville, Ark., a "super co-op" formed by three REA-financed distribution co-ops, was granted a loan of $10,558,000 on Nov. 25. Arkansas Electric plans to construct a 30,000-kw steam generating plant near Ozark, Ark., 544 miles of 69-kv transmission line and 22 substations, all of which will be leased to the Department of Interior's Southwestern Power Administration.

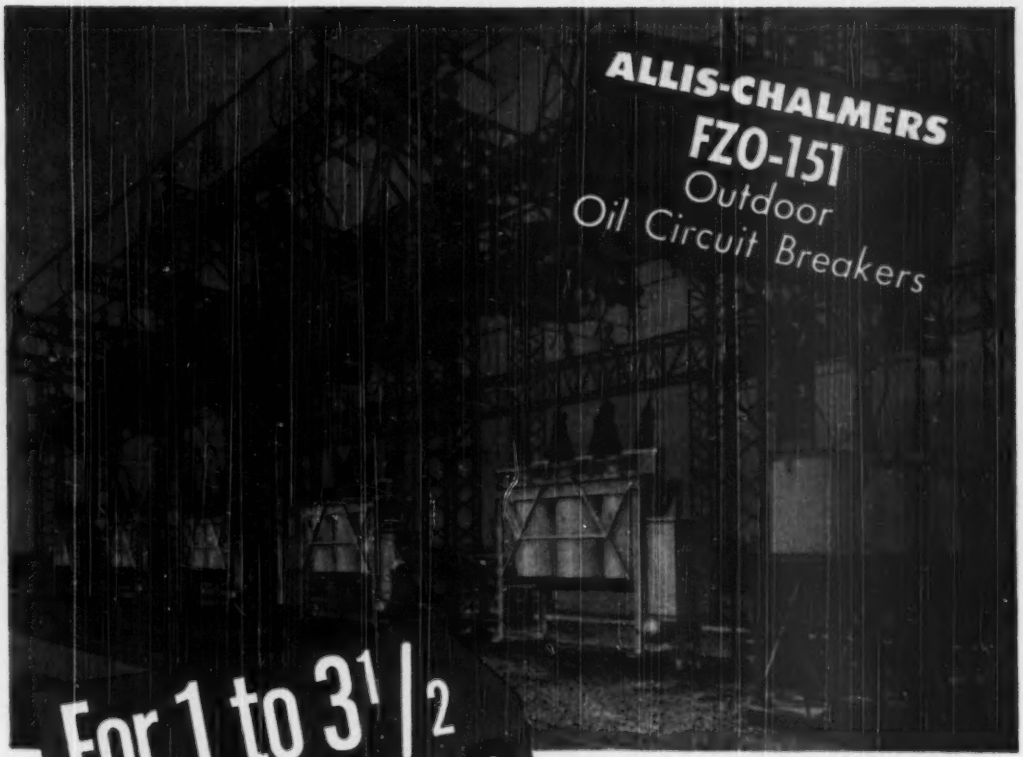
Meanwhile, U. S. District Court in Washington has not ruled on the suit brought by ten Missouri and Arkansas electric companies to block similar loans approved for three co-op federations in the neighboring state of Missouri (EW, Nov 27, p 13).

The leasing agreement between SPA and Arkansas Electric, under which the Interior power agency would lease the lines for 40 years and make amortizing payments to the super co-op, was signed Dec 5, 1949, nearly a year before REA approved the loan.

The proposed Arkansas Electric loan came under fire in Congress last January when Rep Boyd Tackett, Arkansas Democrat in whose district the new co-op system is planned, attacked the arrangement with SPA. Tackett introduced a bill to require Congressional approval of such loans, but it was not reported out of committee. Neither was an identical measure that was introduced in the Senate by Sen Elmer Thomas, Oklahoma Democrat.

REA said that the three co-op members of Arkansas Electric—Arkansas Valley Electric Cooperative Corporation, Ozark; Carroll Electric Cooperative Corporation, Berryville; and the Ozark Rural Electric Cooperative Corporation, Fayetteville—now serve a total of 26,000 consumers and will add 12,000 more as a result of the new loan.

Savings in wholesale power costs to the co-ops over the period 1952-1955 are estimated at $1,240,000, REA declared.



For 1 to 3½ Million KVA*

- **MECHANICALLY TRIP-FREE PNEUMATIC OPERATOR** *assures positive tripping*
- **SINGLE-BREAK *RUPTOR* DEVICE** *(5 cycle interruption if required) for low arc energy release*
- **EVERY BREAKER** *factory assembled, tested, and shipped without dismantling.*

INSTANT, POSITIVE CONTACT OPENING under all conditions is *assured* with FZO-151 breakers. The reason is Allis-Chalmers mechanically trip-free pneumatic operator. In case of a fault, the operator is effectively uncoupled from contact mechanism by means of a positive mechanical linkage. Contacts open *independent of valve operation or cylinder back pressures* . . . there's nothing to hinder instant tripping.

Positive operation is further assured with simple, single-break *Ruptor* interrupting device that extinguishes arc without use of unnecessary moving parts that may bind or fail. Self-cleaning action of bayonet-type moving contacts prevents formation of high resistance oxides. Low inertia pole unit mechanism of straight line motion type gives high speed interruption with low arc energy release.

Complete factory test data accompanies every breaker. For details on Allis-Chalmers breakers for any utility need, contact your A-C sales office.

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STANDARD RATINGS
(8 cycle interruption)

Rated KV	Rated amp. 60 cycle	KVA interrupting Capacity
69	600	1,000,000
69	1200	1,500,000
69	1200	2,500,000
69	2000	3,500,000

GET NEW BULLETIN
71B7045 for ratings, dimensions and details of construction of type FZO-151 breakers.

A-3073

Ruptor is an Allis-Chalmers trademark

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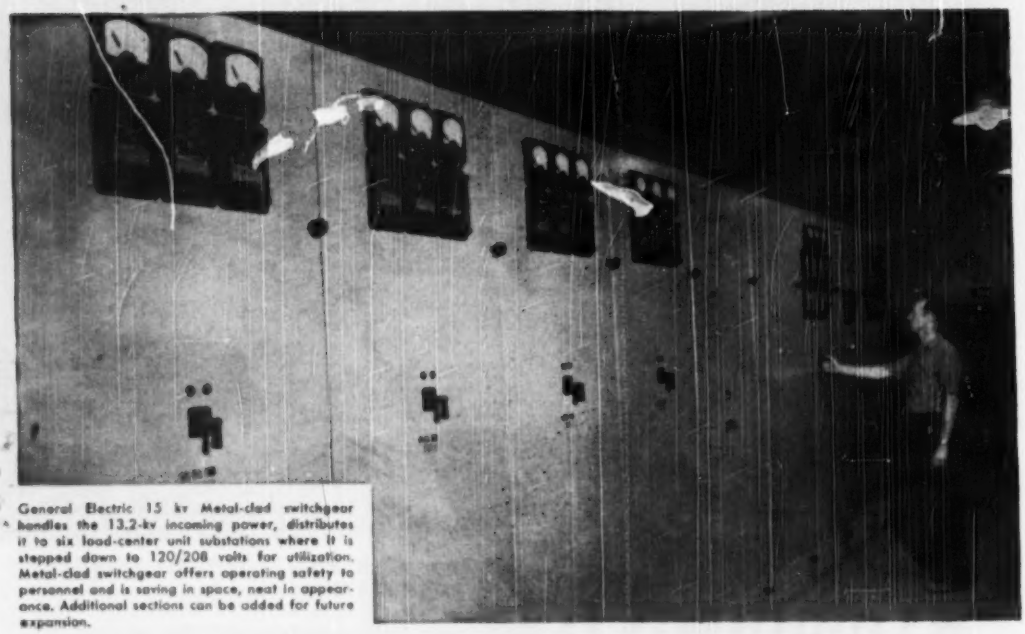
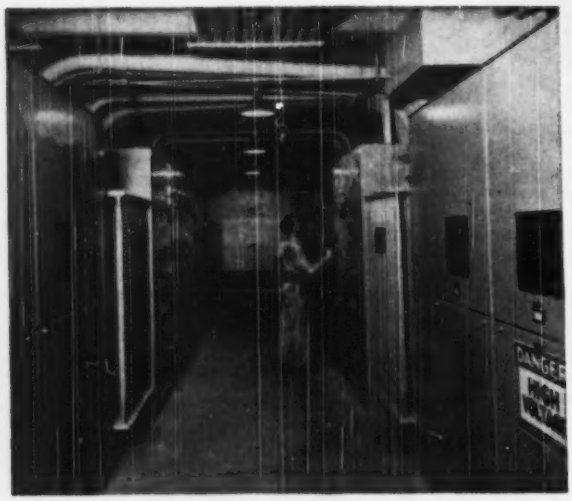
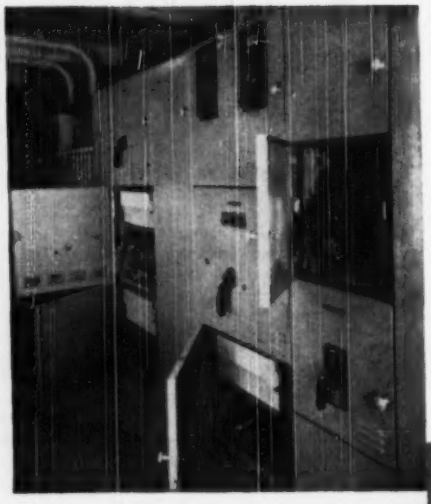
METAL CLAD SWITCHGEAR



General Electric 15 kv Metal-clad switchgear handles the 13.2-kv incoming power, distributes it to six load-center unit substations where it is stepped down to 120/208 volts for utilization. Metal-clad switchgear offers operating safety to personnel and is saving in space, neat in appearance. Additional sections can be added for future expansion.

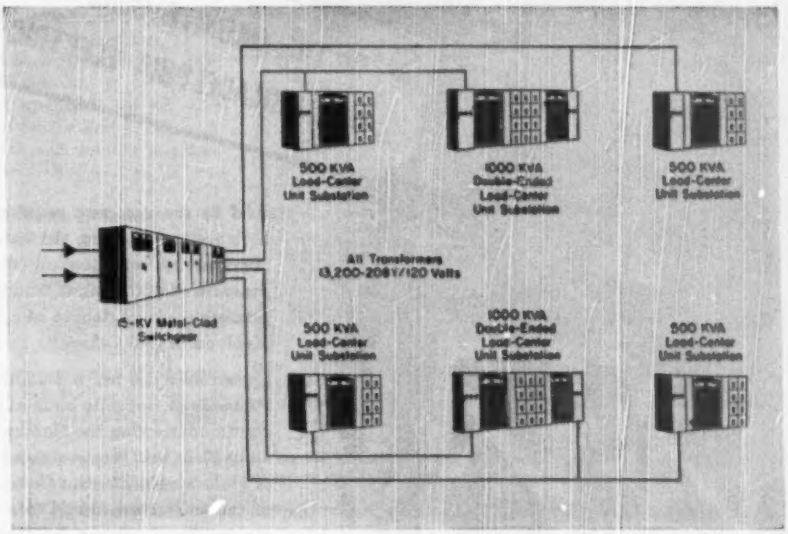


Load-center unit substations receive 13.2 kv power and step it down to 120/208 volts for utilization. Air switches on primary are easy to operate, blades are easy to see. Note entire load-center is metal-enclosed thus offering operating safety to personnel.



Low-voltage end of load-center unit substation showing air circuit breakers that have plenty of "IC" (Interrupting Capacity) to handle all short circuits. Breakers are of the drawout type, easily removable for inspection or maintenance.

HELPS PROTECT SERVICE AT TELEPHONE COMPANY INSTALLATION



In this installation General Electric Metal-clad switchgear receives the incoming 13.2 kv power and distributes it to six G-E load-center unit substations. Three load-centers, two single-ended units rated 500 kva and one double-ended rated 1000 kva, are located in the basement. Three other units of identical rating are on an upper floor. From these load-centers utilization circuits feed 208/120-volt power both upwards and down, and provide efficient, low-cost power at constant voltage wherever desired.

This installation is a complete General Electric project—one source of responsibility plus the very best in coordinated planning, engineering, manufacturing, and service facilities to give maximum savings and efficiency to the customer.

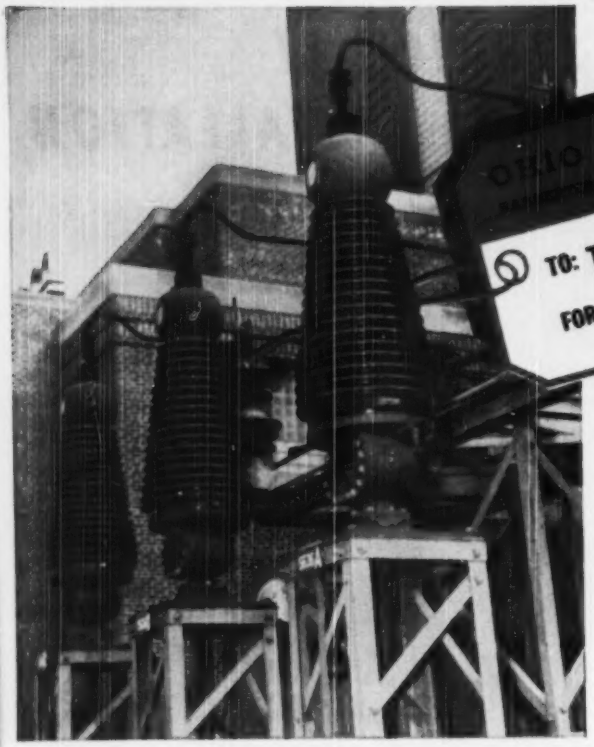
Be sure to see the "More Power to America" full-color sound slidefilm "Modern Industrial Power Distribution." Ask your G-E sales representative to arrange a showing for your organization.

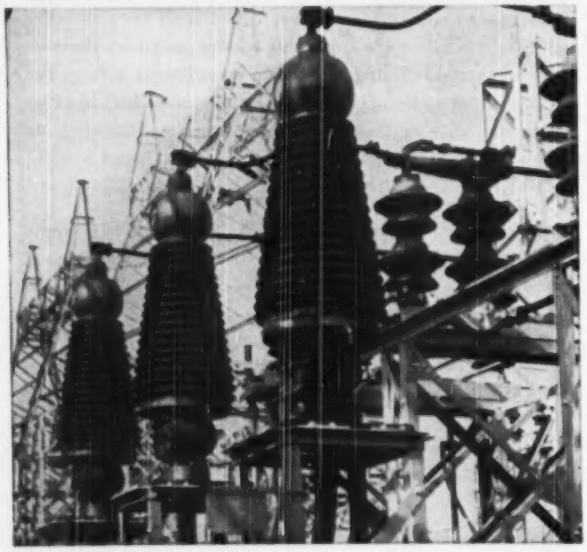
MODERN INDUSTRIAL power distribution systems using G-E switchgear are applicable to any industrial plant or commercial building where you want proper voltage for top performance of equipment, an extremely flexible setup to take care of expanding or changing loads, adequate short circuit protection, safety to personnel, and low installation and maintenance costs.

INVESTIGATE TODAY the many advantages of using General Electric switchgear in *your* plant for efficient, flexible power distribution. Contact your G-E sales representative for further information—or write for the helpful bulletins listed below. *Apparatus Department, General Electric Company, Schenectady 5, New York.*

GEA-3083 Metal-clad Switchgear
GEA-4966 Low-voltage Metal-enclosed Switchgear
GEA-3592 Load-center Unit Substations
GEA-3758 Load-center Power Distribution

GENERAL ELECTRIC





TO: THE OKONITE COMPANY
FOR: PHILADELPHIA ELECTRIC CO.

Add to the complex requirements of a high voltage bushing, the extra demands imposed by retaining oil at a constant pressure of 200 pounds, and you will appreciate the high degree of specialization involved in O-B Oilostatic Potheads.

Shown here are two installations of these Potheads at opposite ends of a 9.25-mile circuit connecting the Southwark Generating Plant and Westmoreland Substation of Philadelphia Electric Company. Some of the characteristics of this installation are briefly described by the makers of Oilostatic cable, The Okonite Company.... "Voltage, 66 kv, 880 amperes, 105,000 kva rating. Load factor, 90 per cent. Three conductors in single 6¼-inch pipe. Conductor size, 1,500,000 cir mils. Copper temperature, 75 degrees C. Insulation thickness, 0.35-in. And, equipped with..."

POTHEADS

AN ESSENTIAL PART OF OILOSTATIC CABLE

Ohio Brass

MANSFIELD, OHIO

GE Head Says Utilities Can Meet Power Needs

There will continue to be "enough power to meet anticipated needs" if the electric utility industry is permitted to continue its expansion program, Charles E. Wilson, General Electric Co president, declared at the National Press Club in Washington Dec 5.

Wilson told capital newsmen that, "There will continue to be enough power if the equipment now on order and planned by the electric utility industry is built and installed as scheduled, despite a shift to a partial war economy."

Wilson mentioned, however, three possibilities which could bring on a power shortage:

1. If aluminum and other big war plants "are heedlessly located in sections of the country where power can't be made available to them";

2. If power equipment manufacturing facilities are diverted to other purposes, delaying production of equipment now on order;

3. If necessary materials are not made available for this equipment.

GE estimates, made independently but within 1% of Edison Electric Institute figures, place total power demand in 1953 at 416 billion kwhr, 43% higher than 1949, and peak load at 77.4 million kw, 37% above 1949.

Generating equipment manufacturing capacity will keep up with the rapid expansion of the utilities, the GE president indicated. Manufacturers will ship 21.3 million kw of generating equipment during the three years, 1950-52. By 1953, another 7 million kw will be needed, but manufacturing capacity will be up to 11 million kw.

Paralleling the expansion of the utilities, Wilson said that GE's large steam turbine capacity has gone up 60% in the past decade, "thanks to a new $30-million turbine plant . . . which I thought for a time might be dubbed 'Wilson's folly.'"

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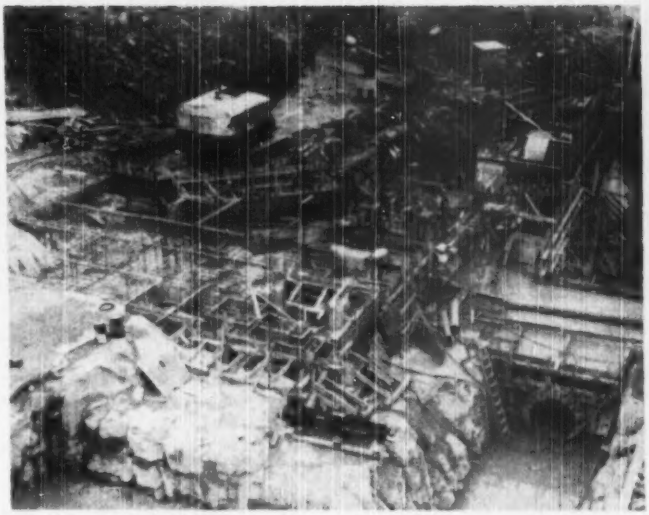
Chapman Calls Meeting

Secretary of Interior Oscar L. Chapman has called a second meeting of the Electric Utility Defense Advisory Council for Thursday Dec 14 at the Department of Interior in Washington.



NEW YORK CITY's drinking water will run the turbines at the Neversink hydro plant of Central Hudson Gas & Electric Corp at Grahamsville, Sullivan County, N. Y. The plant is between the Neversink Reservoir and the new Rondout Reservoir of the city. The utility got the right to use city water in 1948 when the city through condemnation proceedings obtained certain water rights of the utility on Rondout Creek. At lower right can be seen the by-pass and stilling chamber through which the city can secure water when plant is not in operation

7 Rural Co-ops May Get Power at 10-Year Rate

A group of rural electric cooperatives in Mississippi may receive wholesale power at a low, ten-year rate, despite the Rural Electrification Administration's policy of approving power contracts for no longer than five years.

A new five-year agreement between Mississippi Power & Light Co. and seven Mississippi co-ops provides for both five and ten-year rates. If the co-ops renew the five-year contract which REA has approved, the lower ten-year rate will be made effective retroactive to the start of the first five-year period. This is guaranteed by an escrow agreement under which Mississippi Power & Light is setting up a bank fund covering the difference between the co-ops' payments and the lower rate.

During negotiations in Mississippi, the co-ops agreed to the ten-year contract, but Washington REA officials said they would not approve a contract for longer than five years. In this situation, the company proposed to set up the new fund and put the co-ops on the ten-year rate if they renew the contract. The escrow funds would be paid to the co-ops when they renew.

REA officials said that they could not give the lower rate any consideration in making studies in connection with possible generating and transmission loans to the co-ops, however. The only rate which could be considered would have to be the rate specified in the five-year contract, they noted.

•

Los Angeles Will Build 400,000-Kw Steam Plant

At Seal Beach, Calif., Los Angeles' Department of Water & Power will build its fourth steam plant. It will be located adjacent to a present 75,000-kw plant and will house four generating units, each with a capacity of 100,000 kw.

The first section is scheduled for completion in about three years and will contain two of the four units. Completion of the entire project is expected by 1957.

Estimated cost is $58 million. It will be financed from revenue bonds and operating revenues.

Changes in Capacity Reported to Federal Power Commission

PLANT ADDITIONS DURING SEPTEMBER

Utility	Plant	Fuel	Capacity (Kw)
Fort Wayne (Ind.) Municipal Light & Power Works	Lawton Park	S	10,000
Public Service Co of Indiana	Noblesville	S	40,000
Union Electric Power Co (Ill.)	Venice, No. 2	S	80,000
Portland (Mich.) Electric Department	Water Works	IC	820
Detroit (Mich.) Public Lighting Commission	Mistersky	S	40,000
Consumers Power Co (Mich.)	B. C. Cobb	S	60,000
Northern States Power Co	Holcombe (Wis.)	H	11,250
Northern States Power Co	Riverside (Minn.)	S	60,000
Orange City (Iowa) Municipal Light Department	Orange City	IC	700
Corning (Iowa) Municipal Utilities	Corning	IC	843
Otter Tail Power Co	Westhope, N. D.	IC	400
Northwestern Public Service Co	Yankton, S. D.	IC	2,480
Northwestern Public Service Co	Webster, S. D.	IC	1,984
Beresford (S. D.) Power Department	Beresford	IC	700
Georgia Power Co	Yates	S	100,000
Florida Power & Light Co	Dupont Building	IC	700
Yale (Okla.) Municipal Light Plant	Yale	IC	520
Brazos River Transmission Electric Cooperative, Inc, (Texas)	W. R. Poage	S	11,500
Eugene (Ore.) Water & Electric Board	Lookout	H	7,500
San Diego (Calif.) Gas & Electric Co	Silver Gate	S	50,000
Pacific Gas & Electric Co, (Calif.)	Cresta	H	33,750
Pacific Gas & Electric Co, (Calif.)	Kern	S	92,000

PLANT RETIREMENTS IN SEPTEMBER

Public Service Electric & Gas Co	Perth Amboy, N. J.	S	20,000
West Penn Power Co	Millsburg, Pa.	H	215
Northwestern Public Service Co	Huron, S. D.	S	200
Carroll Light & Water Plant	Carroll, Neb.	IC	106
Western Light & Telephone Co	Mankato, Kan.	IC	192
Louisiana Power & Light Co	Ringgold	IC	48

H—Hydro, IC—Internal Combustion, S—Steam
United States Capacity as of Oct 1—Steam, 47,593,961 kw; Internal Combustion, 1,868,906 kw; Hydro, 17,450,055 kw; Total 66,917,922 kw.

Hand, Leonard Appointed to NPA Equipment Unit

Two staff members have been appointed to the power equipment division of the National Production Authority.

The new equipment staff members are E. J. Hand, formerly specifications engineer for the Department of Commerce's Office of Small Business, and Arthur B. Leonard, Washington, D. C., engineer.

Hand was with the Potomac Electric Power Co from 1923-41 and has been with the Federal Power Commission and the War Production Board. Leonard also served with WPB and other federal agencies.

The power equipment division is being organized under the direction of Robert M. Hatfield, Jr, of Combustion Engineering-Superheater, Inc, who is serving as a consultant and acting director of the division.

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IBEW Petition Denied

The petition of the International Brotherhood of Electrical Workers, AFL, to represent survey crews and meter readers in the Huntington, W. Va., district of Appalachian Electric Power Co has been denied by the National Labor Relations Board. The board found, incidentally, that instrument and rodmen in the crews are technical employees. IBEW already bargains for the production and maintenance workers.

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EEI Releases Program on Industrial Lighting

A Planned Industrial Lighting Program, designed for use by electric light and power companies, lighting equipment manufacturers, and others in the electrical industry, has been released by Edison Electric Institute and Better Light Better Sight Bureau.

The program is the second of five sponsored by EEI to promote school, store, office, home, and factory Planned Lighting.

The materials offered in the industrial lighting program include a guide folder containing facts about the materials available; four mailing pieces which present the advantages of Planned Industrial Lighting; a customer handout booklet, *The Facts of Light in Modern Industry;* and a 14-page visualizer for presentation to industrial prospects.

Prices of the mailers, booklets, and visualizers may be obtained from EEI. Orders should be addressed to Edison Electric Institute, 420 Lexington Ave. New York, 17, N. Y.

Storm Outages Provoke Little Customer Complaint

Customers were fully aware of the problems faced by utilities during the recent windstorm that swept the Eastern states, and complaints were few. A check by ELECTRICAL WORLD of a number of companies revealed that many of them were commended editorially by local newspapers for the excellent job they had done.

Practically all customers were back on the line Nov 30, five days after the storm. The few that were still out were in isolated sections—seashore and mountain resort areas or in districts where floods had slowed restoration work.

Pennsylvania Electric Co, whose physical damage was the greatest ($1 million) had only 65% of its customers back on the line by Dec 4. It expected only 90% restoration by Dec 9. Most of the damage was in Altoona and in Blair County. A heavy ice storm brought down both distribution and transmission lines which were then embedded in a thick coating of ice as they rested on the ground. Continued cold hampered line crews.

Riverside substation which was flooded out when the Juniata River went over its banks was put back in service on Nov 29.

Voluntary curtailing of use of electricity in Altoona was ended Dec 4 when transmission lines were restored.

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Utility Plans Expansion Improvement Program

Public Service Co of New Mexico plans an $11.7-million expansion and improvement program to be put in effect over a three-year period. The company serves Albuquerque, Deming, Sante Fe, and Las Vegas with electricity and operates community water service for Sante Fe and Las Vegas.

Largest expenditure will be at Albuquerque for a $3-million power plant and $2.5 million for distribution expansion. In Sante Fe, a 6,000-kw steam turbine will be installed at the power plant recently completed, with another $1.5 million to be spent on the power distribution system. Deming will have a new substation, increasing the city's receipt of power from the Bureau of Reclamation from 4,500 to 7,500 kw.

Over 300 Manufacturers Display Equipment at National Power Show

(See Center Spread)

Thousands of products, many of them officially announced for the first time, were on view at the 19th National Exposition of Power and Mechanical Engineering held in New York from Nov 27 to Dec 2 under auspices of the American Society of Mechanical Engineers. More than 300 manufacturers exhibited their power plant and industrial equipment in 466 booths on three floors of Grand Central Palace. Much emphasis fell on instrumentation.

Leeds & Northrup Co

Leeds & Northrup Co publicly announced a variable-frequency, continuous-type telemeter which involves a combustion rate anticipator tieing combustion control directly to the turbine-generator. This direct hook-up between electrical and master boiler controls permits stabilization of steam pressure under large rates of load change (25-30 and more Mw per minute).

Outstanding instruments exhibited by Brown Instruments included: 1. A new two-pen Electronik strip-chart recorder used in load dispatchers' control rooms to measure tie-line power transfer. One pen records the tie-line schedule setting; the other pen records deviation from the schedule. The pens can be operated by telemetered signals. 2. A recording wattmeter features the continuous balance principle, the pen instantly following load changes. 3. A linear-scale flow meter suitable for centralized location utilizes an electric inductance bridge transmission system from meter body to recording instrument.

Bailey Meter Co

Bailey Meter Co displayed a line of console-arranged miniature centralized boiler controls. Scales can be selected so that all pointers fall into a horizontal or diagonal line when conditions are normal—any factor at an undesired value shows up "out of line" on the console. Up to ten units can be mounted on each console.

James G. Biddle Co had on view for the first time its Model 1-B Megger low-resistance ohmmeter which can be used for checking such valves as bar-to-bar armature resistance or railroad bond resistance.

Republic Flow Meters Co introduced its TeleMaster electronic master control system which eliminates transmission lags to make it suitable for combustion control regardless of distance involved.

An addition to the Richardson Scale Co's line of automatic coal scales was shown which remained pressure-tight under back pressures up to 60 in. of water. Hopper capacities go to 500 lb, maximum hourly coal capacity to 40 tons.

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Interior Granted Delay in Roanoke Rapids Case

The Federal Power Commission has given the Department of Interior more time to file its exceptions to the examiner's decision on Roanoke Rapids, but the commission refused to order an abbreviated record to be prepared for the prolonged proceedings (EW, Dec 4, p 95).

Deadline for filing exceptions to the decision favoring a license for Virginia Electric & Power Co to develop the controversial site was extended from Dec 5 to Dec 22. If exceptions are filed—and Interior and the Virginia REA Association are expected to file them—oral argument will be held before the commission Jan 11.

The Power of Prayer

The wind was howling around the Morristown office of Jersey Central Power & Light Co on the afternoon of Nov 25. An elderly, bedridden lady phoned to express her confidence in the restoration work that the company was doing. She asked the employee who answered her call to join her in prayer for Divine assistance. He consented. She prayed and the man added an occasional "amen." When finished she thanked him for his participation. Very shortly afterward the storm subsided.

Utility Anti-Strike Law in Wisconsin to Be Tested

Wisconsin's public utility anti-strike law will get its first test of constitutionality early in 1951. The U. S. Supreme Court has agreed to hear cases involving the Milwaukee Gas Light Co and the Milwaukee Electric Railway Transport Co.

The first case, brought by members of the CIO United Gas, Coke, and Chemical Workers, resulted when the union's negotiating committee was fined for contempt of court after failing to comply with the court order to call off a strike against the gas company.

The second case, brought by the AFL Street Railway Union came up when the Wisconsin Employment Relations Board invoked the law to prevent the union from calling a strike against the transport company.

The law prohibits public utility employees from interrupting an essential service by a strike. It also provides that upon the request of either party any labor dispute of this kind must be settled by arbitrators appointed by the state ERB.

A third union is asking its national headquarters for authority to appeal another court order. A Wisconsin circuit court handed down an injunction prohibiting the Western Electric Co workers from picketing telephone exchanges.

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20,000-Kw Unit Scheduled

Georgia Power Co has begun excavation for an enlarged powerhouse at the Bartletts Ferry hydro project on the Chattahoochee River near Columbus. A 20,000-kw generator will be installed, increasing the capacity of this project from 45,000 kw to 65,000 kw. Operation is scheduled to begin in late 1951.

•

Gas Explosion at Plant

Pipe fitters replacing a 2-in. valve on a gas main apparently allowed some raw gas to escape into the basement of the 80,000-kw Weleetka Plant of Public Service Co of Oklahoma. Gas was sucked up into the boiler and exploded, backfiring into the basement. Six men were seriously burned. There was no serious plant damage.

YIELDS (%) — Operating Electric Utility Securities

Quality	Bonds			Preferred Stocks			Common Stocks		
	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
DATE									
1950									
Nov. 30	2.66	2.69	2.79	3.81	4.09	4.48	5.93	6.73	7.60
Nov. 22	2.65	2.67	2.79	3.81	4.05	4.47	5.86	6.71	7.45
END OF QTR.									
3rd 1950	2.66	2.67	2.76	3.81	4.08	4.46	5.70	6.54	7.25
2nd 1950	2.68	2.66	2.74	3.79	4.03	4.38	5.38	6.51	7.50
1st 1950	2.59	2.61	2.74	3.78	4.01	4.36	5.22	5.85	6.67
4th 1949	2.59	2.61	2.79	3.85	4.06	4.46	5.37	6.15	7.01

Data: Reis & Chandler, Inc.

Excess Profits Tax Bill to Contain Relief Provision for Utility Industry

Regulated public utilities are going to get special treatment in the excess profits tax bill voted by the House of Representatives last week.

If the Senate approves the bill—and there's a growing chance it will—electric and gas companies will be permitted to use a special method of computing their excess profits credit. (This credit is equal to "normal" earnings; it is subtracted from total net income to give "excess profits").

The relief provision isn't entirely perfect in the view of the electric and gas industries. But it gives them a far better break than unrelieved application of the tax would. And it is a good deal better than the last war's law, which gave utilities no special treatment at all.

As applied to ordinary corporations the House version offers two alternative methods of computing excess profits credits:

The average earnings method—Corporations could treat as "normal" earnings (exempt from EPT) the average of the best three years out of the four-year period 1946-49 reduced by 15%. Tax rate would be 75%, and the levy is retroactive to July 1.

The invested capital method—they could use an invested capital base similar to that permitted in the last war's law. Invested capital would be defined to include equity capital, retained earnings, and borrowed capital.

The old law allowed corporations to consider as part of normal earnings 8% of the first $5 million of equity capital and retained earnings, 6% of the next $5 million, and 5% of capital above $10 million. The House would make the respective percentage rates 12, 10, and 8.

The World War II law permitted inclusion of only one half borrowed capital in the invested capital base. However, half of the interest paid on borrowed capital was disallowed as a cost—the effect being to allow a return on borrowed money halfway between the interest rate and the permitted rate on equity money. The current bill is more generous. It permits a rate of return equal to 133⅓% of the interest rate on all (not just half) borrowed funds.

Regulated public utilities get one more type of excess profits credit to choose from.

The new credit consists of the sum of:

(1) the corporate normal tax and surtax payable by the utility in the taxable year in question, plus

(2) 6% of the sum of the equity capital, retained earnings, and borrowed capital of the utility—less interest payable on the borrowed capital.

The House's intention in offering this third method was to make sure that an excess profits tax was not imposed until the utilities were earning a rate of 6% after corporate normal and surtaxes. It took into account the fact that profits of utilities in the base period years were held down by regulatory commissions to well below the profits earned by some unregulated industries.

By and large, industry leaders think this is fair. But they find one fault in the bill's definition of equity capital.

The House bill uses an arbitrary tax-accounting formula (of the kind already written into the Internal Revenue Code) to define equity capital. The utilities would prefer adoption of the definition they use in their own books of account. These definitions are generally those approved by regulatory agencies.

It's hard to say whether a conference committee will change this definition. But whether it does or not, the special-treatment-for utilities provision is sure to end up in any EPT that becomes law—this year or next.

FINANCIAL BRIEFS

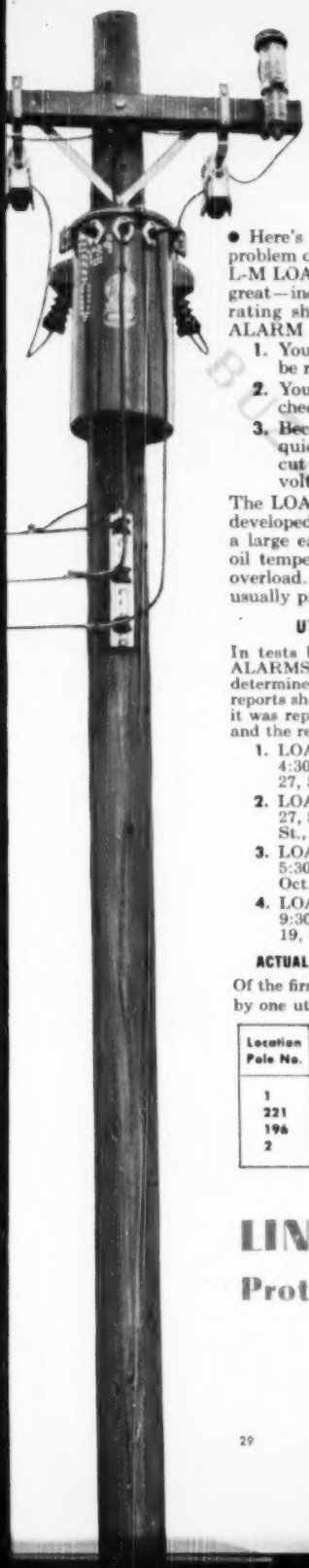
An $8-million refinancing program planned by Public Service Co of New Mexico has been approved by the state Public Service Commission. The company plans to spend $11.7 million for improvements, most of them in Aubuquerque, Santa Fe, and Las Vegas.

Electric Utility Financing—November 18-December 2

Company	Description	Amount of Offering (000)	Offering Price	Yield at Price to Public
Bonds				
Central Power & Light	3% 1980 new money	$10,000	102.399%	2.88%
Wisconsin Public Service	2¾% 1980 new money	4,000	100.50	2.85
Preferred Stock				
Tide Water Power	132,000 conv sh $1.35 $25-par ref. and new money	3,564	$27.00	5.00
Kansas Gas & Electric	45,000 sh 4.28% $100-par new money	4,601	102.25	4.19
Gulf States Utilities	70,000 sh $4.20 $100-par new money	7,127	101.818	4.13
Common Stock				
Pennsylvania Power & Light	475,409 sh new money	10,934	23.00	6.96
Kansas Gas & Electric	75,000 sh new money	2,372	31.625	6.32

SCHEDULED

Bonds—Southwestern Gas & Electric, 1980 new money, $6 million; Union Electric of Missouri, 1980 new money, $25 million; Central Illinois Public Service, sinking fund debentures, new money, $6 million.
Common Stock—Minnesota Power & Light, 150,000 sh new money, $4 million.



Cut Transformer Burnouts... Cut Load-Check Costs...with NEW L-M TRANSFORMER LOAD-ALARM*

● Here's the simple, economical answer to the problem of locating overloaded transformers. The L-M LOAD-ALARM signals when the load is too great—indicating that a transformer of higher kva rating should be installed. Using the LOAD-ALARM means:

1. You save transformers because they can be replaced before they burn out.
2. You eliminate the need for costly load checks to locate overloaded transformers.
3. Because overloaded transformers can be quickly located and then replaced, you cut down the number of customer low voltage complaints.

The LOAD-ALARM is a simple, thermal device developed by L-M engineers in cooperation with a large eastern utility company. It operates on oil temperature rise caused by prolonged heavy overload. It emits an audible signal which is usually promptly reported by the customers.

UTILITY MAKES TIME-CLOCK TESTS

In tests by a large eastern utility, L-M LOAD-ALARMS were set by time clock to operate at predetermined times of the day. Following are a few reports showing time the alarm began operating, time it was reported, and location of the test transformer and the reporter's residence.

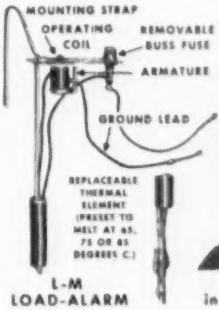
1. LOAD-ALARM at 371 Villa St., Sept. 27, 4:30 P.M. Reported from 361 Villa St., Sept. 27, 5:20 P.M.
2. LOAD-ALARM at 133 Knowlton St., Sept. 27, 5:00 P.M. Reported from 129 Knowlton St., Sept. 27, 5:08 P.M.
3. LOAD-ALARM at 61 Grosvenor, Oct. 7, 5:30 P.M. Reported from 40 Belmont St., Oct. 8, 10:00 A.M.
4. LOAD-ALARM at 105 Hickory, Oct. 17, 9:30 A.M. Reported from 111 Hickory, Oct. 19, 4:00 A.M.

ACTUAL OVERLOADS REVEALED BY LOAD-ALARMS

Of the first 15 LOAD-ALARMS put in actual service by one utility, four operated under these conditions:

Location Pole No.	ALARM Reported by	Transformer Rating	Actual Load
1	Customer	15 Kva	28 Kva
221	Employee	15 Kva	27 Kva
196	Several customers	15 Kva	29 Kva
2	Several customers	50 Kva	85 Kva

"Use of this device allows us to make greater use of our transformer capacity," says one of this utility's district superintendents. "It allows us time to make secondary surveys before changing transformers. Necessary replacements can be made during normal working hours instead of on overtime, and long interruptions and burnouts and resulting rewinding costs are eliminated."



L-M LOAD-ALARM

L-M LOAD-ALARM in position in transformer tank.

Continuous overload causes the oil temperature to rise. When oil temperature reaches the predetermined melting point of the alloy thermal element, the alloy melts, setting off the buzzer. Transformer acts as sounding board; secondary conductors carry the sound to connected structures. When customers phone (and they do!) lineman removes the fuse through the handhole, silencing the buzzer until it is convenient to make a load check and install a transformer of higher rating.

TRY IT YOURSELF!

L-M LOAD-ALARMS cost about $3.00. Order enough for a test, right now. Order from the L-M Field Engineer or direct from Line Material Co., Milwaukee 4, Wisconsin (a McGraw Electric Company Division).

*Trademark

LINE MATERIAL

Protective Equipment

LM

19th National Power Show

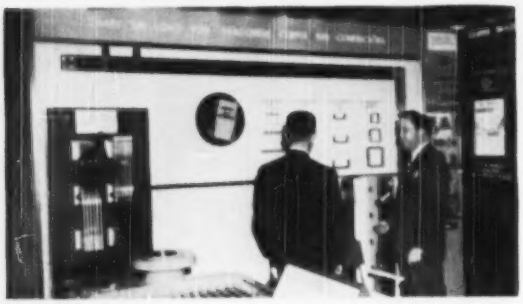
Grand Central Palace, November 27 to December 2

JAMES G. BIDDLE CO exhibited two new devices; a low-resistance ohmmeter and a dual-operated Megger insulation tester

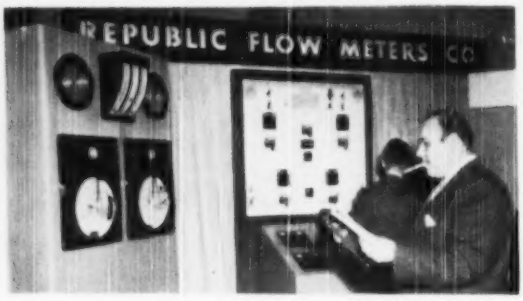
BROWN INSTRUMENT featured, foreground, a new two-pen continuous-line recorder and a new linear integrating flow meter

LEEDS & NORTHRUP CO displayed two new things; a variable frequency telemetering system and a combustion rate anticipator

CUTLER-HAMMER drew interest with a demonstration of its new ac motor starter with built-in dc exciter for quick stops



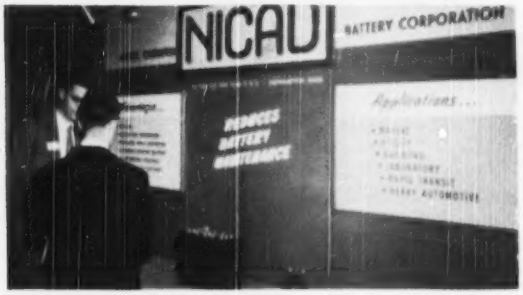
ANACONDA shared space with American Brass Co. Anaconda presented bus conductors; American, condenser tubes and sheets



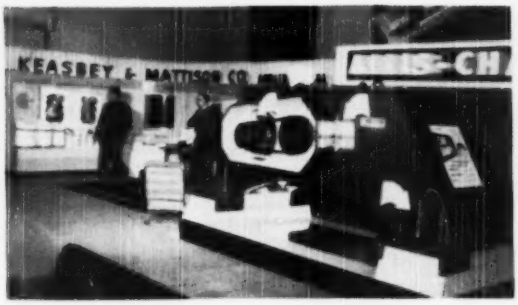
REPUBLIC FLOW METERS built exhibit around a console model of its new electronic meter control system, in right background

FROM THE BALCONY this view across of the main exhibit floor includes a representative cross-section of exhibitors. In the foreground is Bailey Meter Company's display, to the left rear Philadelphia Gear Works, right rear Heacon, Inc, and in background Allis-Chalmers

ALLEN-BRADLEY showed a nearly complete representation of its ac motor control line plus new 600 and 900 amp ac contactors



NICKEL CADMIUM BATTERY CO centered its display around a cutaway sample of its light-weight Nicad battery for power uses



KEASBY & MATTISON's display of pipe insulation shares this view with a car shaker from Allis-Chalmers' booth on main floor

TAYLOR INSTRUMENT CO drew the inquisitive with this demonstration of its new Tri-Act controller for pneumatic systems

YOU CAN BE **SURE**.. IF IT'S

Westinghouse

Don't be a FIXTURE PICKER!

This "character" looks worried. He's picking lighting fixtures. But he won't find the answer in a magazine cutout.

What's more, there is no single "cure-all" lighting fixture. You know that, of course, but how many others do? Each luminaire has a different purpose—a different application—and a different economy depending on specific conditions.

Analyzing these conditions takes an expert. You need the services of a lighting engineer.

Whether you plan lighting, buy lighting, or install lighting, the services of a Westinghouse Lighting Engineer are available to you. J-04281

Westinghouse

PLANNED LIGHTING PAYS

September Energy Sales Up 15.7% Compared to '49

Sales of electric energy in September climbed to a point 15.7% above that for the same month last year.

In September electric utilities sold 24,156,684,000 kwhr to ultimate customers, compared to 20,877,864,000 kwhr in September, 1949. Revenue from ultimate customers totaled $430,679,900, which was 11.1% more than the $387,522,000 received in September last year.

Classification of Sales, September

	Million Kwhr 1950	1949	Percent Change
Residential or domestic	5,256	4,619	+13.8
Rural (distinct rural rates)	836	809	+3.3
Commercial or industrial			
Small light and power	4,434	4,044	+9.6
Large light and power	12,301	10,142	+21.3
Street and highway lighting	249	224	+11.0
Other public authorities	593	541	+9.7
Railways and railroads			
Street and interurban railways	260	274	−5.0
Electrified steam railroads	187	179	+4.6
Interdepartmental	42	46	−9.2
Total to ultimate customers	24,157	20,878	+15.7

For the 12 months ended Sept 30 usage per customer was 8.1% higher than in the 12 months ended Sept 30, 1949. The average customer took 1,789 kwhr, compared to 1,655 last year. Average annual bill was $51.88, which was 5.6% above last year's 12-month $49.15 average. However, revenue per kilowatt hour declined 2.4%, from 2.97¢ to 2.90¢.

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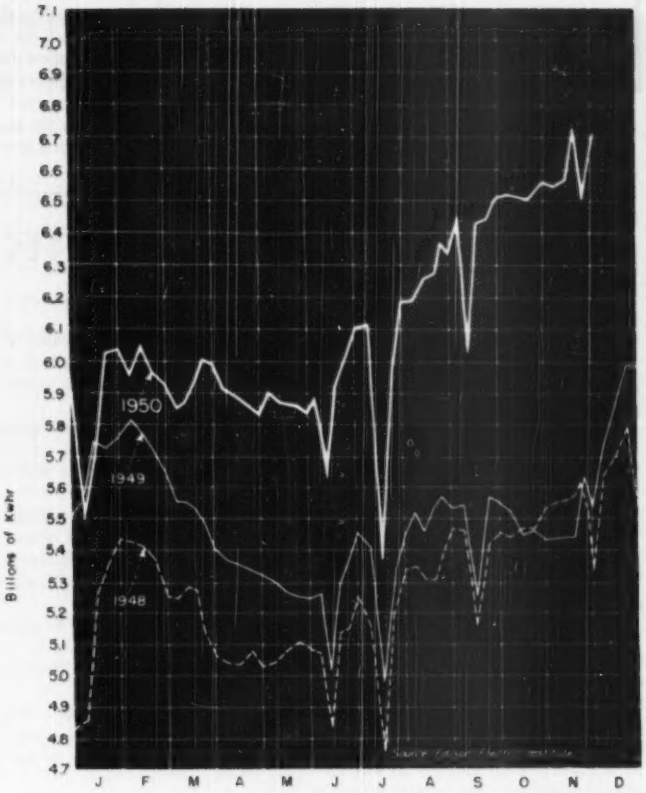
Wisconsin Electric Seeks OK for $120,000-Kw Unit

Wisconsin Electric Power Co plans to build a $100-million power plant with a ultimate capacity of 500,000 kw in the southeastern section of Milwaukee County.

The utility has filed an application with the Public Service Commission for authorization to install two 120,000-kw units. These units will comprise the first two sections of the plant. The first unit was ordered last summer and is expected to be ready for operation in December, 1952.

The company has purchased 368 acres of farm land on the shore of Lake Michigan for the plant site, and will add to this 44 acres acquired previously. The power plant will be known as the Oak Creek Plant.



Output Week Ended Dec 2—6,716,273,000 Kwhr

Weekly Output, Millions Kwhr						Percent Change from Previous Year		
1950		1949		1948		Dec 2	Nov 25	Nov 18
Dec 2	6,716	Dec 3	5,743	Dec 4	5,646	New England	+8.1	+11.9	+13.1
Nov 25	6,508	Nov 26	5,537	Nov 27	5,349	Mid-Atlantic	+10.6	+13.1	+14.1
Nov 18	6,728	Nov 19	5,644	Nov 20	5,627	Central Industrial	+17.7	+19.9	+20.9
Nov 11	6,574	Nov 12	5,435	Nov 13	5,571	West Central	+16.6	+14.8	+16.0
Nov 4	6,551	Nov 5	5,435	Nov 6	5,564	Southeast	+27.0	+22.5	+22.5
Oct 28	6,563	Oct 29	5,433	Oct 30	5,555	South Central	+18.7	+23.8	+22.5
Oct 21	6,503	Oct 22	5,430	Oct 23	5,539	Rocky Mountain	+15.2	+13.9	+17.1
Oct 14	6,509	Oct 15	5,481	Oct 16	5,482	Pacific Coast	+16.2	+15.3	+22.3
Oct 7	6,514	Oct 8	5,450	Oct 9	5,482				
Sept 30	6,503	Oct 1	5,521	Oct 2	5,449	Total United States	+16.9	+17.5	+19.2

Utility Will Add Unit

New York State Electric & Gas Corp will add a 100,000-kw unit to its system at a location to be determined upon completion of engineering studies now under way. The unit is to be delivered by General Electric Co in 1953.

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AEC Counsel Resigns

Joseph Volpe, Jr, general counsel of the U. S. Atomic Energy Commission, resigned Nov 28 to enter private law practice. No successor has been named.

MEETINGS

American Institute of Electrical Engineers
High Frequency Measurements Conference, sponsored with the Institute of Radio Engineers and the National Bureau of Standards, Statler Hotel, Washington, D. C., January 10-12; Winter General Meeting, Statler Hotel, New York, January 22-26.

Pennsylvania Electric Association
Winter Meeting, Transmission and Distribution Committee, William Penn Hotel, Pittsburgh, February 1-2.

Missouri Valley Electric Association
Industrial and Commercial Sales Conference, President Hotel, Kansas City, Missouri, February 8-9.

Adequate Wiring Bureau
Annual Conference, Sheraton-Gibson Hotel, Cincinnati, Ohio, February 15-16.

North Central Electrical Association
Electrical Industries Convention, Nicollet Hotel, Minneapolis, February 25-28.

IN THE INDUSTRY

FISCHER BLACK

"Richard M. McLaughlin, director of the Sanitation Division of the County Health Department, (Westchester County, N. Y.) today commended the utility companies for doing 'a whale of a job' in restoring essential services after Saturday's destructive gale.

"Although 61,000 breaks in power lines were reported in the wake of the storm, Mr. McLaughlin said that only 20 stores out of 3,000 in Westchester, dealing in refrigerated food, lost any considerable amount of food due to spoilage.

"The Westchester Lighting Co reported that at 9 AM (Thursday) service had been restored to all but 1,700 customers, mostly in outlying districts . . ."

This newspaper report originating in White Plains, N. Y., could be duplicated in perhaps several hundred different communities. It does not so much reflect the seriousness of the storm damage to the electric utilities or the obvious inconvenience to customers over a period of several days as it shows that a great deal of credit has in this instance been given to the local utility for "a whale of a job."

Commendation Is Justified

This same commendation could be given to the electric utility industry as a whole for the efforts exerted to restore service to the some 3 million customers who were out at the height of the storm. All employees joined in to provide service as expeditiously as possible. And even with this record number of outages from wind, flood, ice, and snow there was surprisingly little complaining on the part of the customers. Perhaps the greatest reason for this was the willingness of present-day management, through alert public relations departments, to cooperate fully with local newspapers and radio stations by supplying promptly the facts that these molders of public opinion sought. And it can also be assumed that past efforts to improve public relations have borne fruit.

Are Design Changes Called For?

Regardless of the success of the utilities in handling this storm damage and the resulting customer complaints or lack of them, the seriousness of the lessons learned should not be underestimated. The loss of service to customers will cause greater inconvenience as home electrification advances. In the future 3 million customers deprived of service will be harder to cope with than now.

Damage due to fallen trees and limbs along with severe ice conditions accounts for a large portion of the recent trouble. The location of damage was anywhere from the transmission line to the customer service. It can safely be assumed that the design of these facilities was in most cases adequate to withstand any normal hazard. But winds of 90 mph and higher and extremely heavy ice are not normal hazards. They can do extreme damage, especially when they drop trees on power lines, in spite of normal precautions.

Obviously the experiences of this latest storm call for a complete review of the standards of construction and maintenance of each utility. Greater wind and ice tolerances may be the answer. Perhaps aerial cable should be considered for at least primaries and sub-transmission. Maybe other devices can be applied. But it is clear that all past practices are due for serious review. Such investigations started immediately will help to stop foolish demands for more underground construction that usually follow such interruptions to service as the last one.

TECHNICAL NOTES

ARCHER E. KNOWLTON

Power plants are in service that never have burned the fuel for which they were specifically designed. Later plants are more versatile.

Large turbogenerators have so much at stake it is folly to scrimp on the auxiliaries—or on the size of the crews set up to maintain them promptly.

Current engineering designs reflect the urge to "think big" that arises from the irrepressible climb of the output curve; system operators know the load estimates are habitually low.

Acreage de-growthed with herbicides increased 10 times from 1945 to 1947, 5 times more in 1948 and 4 times again in 1949; 200 times overall in 5 years.

Television is to be tried by one power company for a third purpose—watching the stack emission—after successful use in watching the burner flames and the boiler water level.

Control cables detached from terminals and thoughtlessly laid with untaped ends on troughs or concrete floors have been the cause of interruptions of service to sizable areas.

Operators are pinched unnecessarily if coal-handling, fans, pulverizers and thawing facilities are not up to the full capability of the turbogenerator they serve.

Neoprene free of impurities protects equally pure synthetic rubber from attack by soil microbes for which the impurities are food.

Dependence on relaying and 15-cycle reclosure appears to justify omission of ground wire on 287-kv lines at a saving of $8,000 per mile.

Zinc chromate paint in a resin vehicle or an alkyd-resin varnish look promising as corrosion protection for galvanized surfaces.

Roving maintenance crews are proving a practicable way of reducing the standing forces in steam stations on systems where there are several stations.

Mirrors coated with ultra-thin layers of metallic compounds will reflect only a single color; thickness of the film is largely what determines the color.

NEWS ABOUT PEOPLE

Savannah E&P Advances K. C. Lasseter, 3 Others

Kenneth C. Lasseter has been appointed general superintendent of Savannah (Ga.) Electric & Power Co. He succeeds the late Fred C. Morton.

He will be replaced as superintendent of transmission and distribution by

K. C. LASSETER

Patrick E. Seawright, assistant to the general engineer. Seawright's former post will be taken over by Lawrence M. Edwards, who has been distribution engineer, and Charles F. Baker of the utility's engineering department will succeed Edwards.

Lasseter started with Stone & Webster, Inc, in Boston and then worked for Lowell (Mass.) Electric Light Co. He went to Savannah in 1923 as junior engineer. After an interval with Western Public Service Co, Scottsbluff, Neb., he returned to the Georgia utility in 1937.

Seawright has been with Savannah Electric & Power since 1917 in various engineering positions. Edwards joined its sales department in 1934 and has served in the accounting and engineering departments. Baker started with the company in 1939 in the sales department and later was transferred to engineering.

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E. J. Bookout has been named general sales manager of Cochrane Corp, Philadelphia, manufacturer of water conditioning apparatus and steam power plant specialties. Bookout has been Cochrane's Eastern sales manager and before that a sales engineer in the Philadelphia territory.

•

Flagg of Oregon PUC New NARUC President

(See Front Cover)

Newly elected president of the National Association of Railroad and Utilities Commissioners is George H. Flagg, Oregon public utilities commissioner.

Flagg was chosen at the association's recent convention in Phoenix, Ariz., (EW, Dec 4, p 93) to succeed Harry M. Miller of Ohio. He has been serving as first vice president and ex officio chairman of the executive committee.

Other new officers are J. C. Darby, South Carolina, first vice president; Eugene S. Loughlin, Connecticut, second vice president; John P. Randolph, Missouri, general solicitor; and Austin L. Roberts, Jr, NARUC's assistant general solicitor, secretary-treasurer.

A former newspaper man, Flagg started his journalistic career in St. Helens, Ore., on his father's newspaper. Later he was publisher of the *St. Helens Mist* and *Elgin Recorder* and owner and publisher of *Grant County Journal* at Prairie City, the *Condon Globe-Times* at Condon, the *Central Oregonian* at Prineville, and *The Dalles Optimist* at The Dalles.

His state service began in 1934 with his appointment as chief deputy secretary of state. In 1943 the late Gov Earl Snell made him public utilities commissioner. He resigned in 1948 to campaign for the Republican nomination as secretary of state but was reappointed when he lost out in the primary.

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Edward McCarthy, Jr, has been appointed general manager of Colonial Electric Products, Inc, East Paterson, N. J. He formerly was with Singer Sewing Machine Co, New York, as national sales manager.

Con Ed Directors Elect Bauer Vice President

Harry J. Bauer has been elected a vice president of Consolidated Edison Co of New York, Inc.

He will be in charge of purchasing and stores, fuel, and commercial buildings and will retain his present post

HARRY J. BAUER

as president of New York Steam Corp, a Con Ed subsidiary. The departments now reporting to Bauer formerly were under the direction of John H. Aiken, vice president, who has taken over direction of sales and commercial relations activities.

Bauer joined New York Steam as an engineer in 1928. In 1929 he was made superintendent of stations and in 1935 manager of station operations. He was made an assistant vice president in 1942 and a vice president the same year. He has been president of New York Steam since 1946.

OBITUARY

Louis H. Egan

Louis H. Egan, 69, former president of Union Electric Co of Missouri, died in Clayton, Mo., Nov 25. He had been ill for 10 years.

Egan resigned from Union Electric in 1939 as a result of a Securities and Exchange Commission investigation of political contributions by the utility. He and two other Union Electric

executives received prison sentences, Egan for conspiracy to violate the corrupt practices section of the Holding Company Act. He paid a $10,000 fine and served eight months of a two-year prison term before being freed on probation.

Egan's early jobs were with Algoma Steel Co, Sault Ste. Marie, Ontario; Edison Sault Electric Co; and the companies affiliated with Detroit Edison. At the age of 28 he was named general manager of Kansas City Power & Light Co. He went to Union Electric in 1916, was made its general manager, and when the company was combined with Union Electric Light & Power Co became assistant general manager of the merged utility. He was elected president in 1920 at the age of 39.

Egan also served as president of a number of other North American properties, including Mississippi River Power Co, Keokuk, Iowa; Union Electric Co of Illinois; Union Colliery Co; St. Louis County Gas Co; East St. Louis Light & Power Co, East St. Louis, Ill.; Union Electric Land & Development Co; and St. Louis & Belleville Electric Co. He twice was elected president of the Association of Edison Illuminating Companies and served as a member of the utility code committee of the National Recovery Administration.

•

Clarion Spencer Saunders, 76, builder of a number of hydroelectric installations in Quebec, died Nov 22 in Montreal. Saunders retired in 1942 as general manager of Shawinigan Engineering Co, Ltd. He joined the parent Shawinigan Water & Power Co in 1899 after serving as consultant in construction of the company's first power development. Most of the next 40 years he spent with the system, directing building of additions to the Shawinigan Falls developments; stations at LaGabelle, Rapide Blanc, and La Tuque; the storage reservoir at Mattawin; and transmission lines.

Glenn A. Westigard, 52, manager of the application and extension department of Northern States Power Co, died Nov 26 at Birch Bluff, Minn. Westigard joined the company in 1925 in the suburban sales department at Minneapolis and later became sales manager of the Minnetonka district.

NEW ELECTRICAL CONSTRUCTION

A weekly selection of U. S. electrical construction projects announced by private and government utility systems involving more than $70,000. Also listed are major industrial and construction jobs where electrical work is indicated or implied

UTILITIES

Proposed Construction

Arkansas—U. S. Eng., 300 Broadway, Little Rock, furnish oil circuit breakers at Bull Shoals dam.

Arizona—Bureau Reclamation, Dpt. Interior, Phoenix, switches, air switches, disconnecting fuses, transformers for Cochise and Tucson Sub-stations, Davis Dam Proj., Spec. R3-PX-58 (Region 3). L. N. McClellan, ch. engr.

California—State Div. Hys., 120 S. Spring St., Los Angeles, traffic signal sys., Inglewood, Los Angeles Co. G. T. McCoy, Sacramento, state hy. engr.

Fla., Lake Worth—City, power plant addn. Plans deposit $12. Smith & Gillespie, P. O. Box 1408, Jacksonville, engrs.

Idaho—Bonneville Power Admin., 827 N.E. Oregon St., Portland, Ore., const. 33.7 mi. Sandpoint-Bonners Ferry 115-kv transmission line, Bonner Co. Plans deposit $25. L. C. Stewart, engr.

Kan., Wichita—Kansas Gas & Electric Co., 201 N. Market St., plans by Thomas & Harris, A B 321 W. 2 St., 5 story office, $300,000.

Minn., Willmar—City, E. H. Brogren, clk., furnish, erect municipal power plant, steam engineering unit, auxiliary equip., etc., $400,000. Plans deposit $35. Pfeifer & Shultz, 702 Wesley Temple Bldg., Minneapolis, engrs.

Mississippi—Tippah Electric Power Assn., Ripley, 211 mi. rural distr. lines, Proj. Miss. 47 A. Tippah Co. $325,000. Allen & Hoshall, 65 McCall Pl., Memphis, Tenn., consult. engrs.

Missouri—Central Electric Power Cooperative, Jefferson City, 54.5 mi. rural distr. lines, Audrain, Boone, Howard and Randolph Counties, $75,000, Frank Horton & Co., Lamar, engrs.

Missouri—Gascosage Electric Co-operative, Dixon, 77 mi. rural distr. lines, sys. improvs. in Maries, Miller and Pulaski Counties, $400,000. Frank Horton & Co., Lamar, consult. engrs.

Montana—Bureau Reclamation, Dpt. Interior, Bldg. 1 A, Denver Federal Center, Denver, Colo., 2 electric-motor driven deep-well turbine-type pumping units, 2 electric-motor-driven centrifugal-type water pumping units, 2 electric-motor driven gear type oil pumping units Canyon Ferry Power Plant, Missouri River Basin Proj. Spec. DS 3245. L. N. McClellan, Bldg. 1 A, Denver, Federal Center, Denver, Colo., ch. engr.

Montana—Bureau Reclamation, Dpt. Interior, Bldg. 1 A, Denver Federal Center, Denver, Colo., 82 mi. 115,000 volt backbone transmission line from Canyon Ferry Power Plant, under Missouri River 17 mi. east of Helena to Great Falls.

Montana—Marias River Electric Co-operative, Shelby, 147 mi. rural distr. lines and sys. improvs., in Toole Co., $758,000.

North Carolina—Greenville Utilities Comn., Martin Swartz, chan., Greenville, 300 mi. rural distr. lines in Pitt, Beaufort and Craven Counties, $300,000.

Oklahoma—East Central Electric Co-operative, Okmulgee, 1,093 rural distr. lines, Okmulgee Co. $1,315,000. E. R. Taylor, 4107 E. 11 St., Tulsa, consult. engr.

Oklahoma—Indian Electric Co-operative, Cleveland, 146 mi. rural distr. lines, Pawnee and Osage Counties, $150,000. Plans deposit $10. E. R. Taylor, 4107 E. 11 St., Tulsa, engr.

South Dakota—Bureau Reclamation, Dpt. Interior, Huron, Brookings-Watertown-Groton-Huron, 115 kilovolt transmission lines, Transmission Div., Missouri River Basin Proj. Spec. No. DC-3246.

Tenn., Knoxville—At office Rear Admiral J. F. Jelley, officer in Charge of Construction, P. O. Box 365, Naval Base, Charleston, S. C., remodeling and overhauling electric facilities and installing new equipment at Naval Reserve Training Center, NOY 21913, Spec. 24891, for Yards & Docks Annex, Navy Dpt., Arlington, Va. Plans deposit $10.

Tex., Galveston—City, street lighting unit on Broadway, own forces. $90,000. George E. Harris, city engr.

Tex., Tyler—Texas Power & Light Co., Interurban Bldg., Dallas, electric transmission lines from outside to city limits, force account. Approx. $85,000.

Texas—Sam Houston Electric Co-operative, Livingston, rural distr. lines, Sam Houston Co. $100,000.

Va., Warsaw—Town, construction, and operation of electric power plant. $100,000.

Wis., Milwaukee—Wisconsin Electric Power Co., 231 W. Michigan Ave., Zone 3, plans by Fred A. Luber, c/o owner, power plant. $100,000,000 incl. equip. (10 year plan.

Wyoming—Hot Springs Rural Electric Assn., Thermopolis, voted $550,000 bonds, 314 mi. rural distr. lines, 34.5 mi. transmission lines and 4 mi. tie line, H. S. Nixon Eng. Co., WOW Bldg., Omaha, Neb., consult. engrs.

Low Bidders & Contracts Awarded

Kentucky—Pennyrile Rural Electric Co-operative, Hopkinsville, 217 mi. rural distr. lines and sys. improvs., Todd Co., to Roy Richards Constr. Co., P. O. Box 88, Carrollton, Ga., $535,129, Cottrell & House, 902 Stahlman Bldg., Nashville, Tenn., engrs.

Montana—Lincoln Electric Co-operative, Inc., Eureka, 22 mi. rural distr. lines with 9.5 mi. single phase underbuild, Lincoln Co., to R. A. Yerian, Box 506, Hamilton, Ont., Canada, $25,004, General Engineers, Moose Bldg., Missoula, engrs.

Nebraska—Loup River Public Power Dist., Columbus, 70 mi. rural distr. lines, Holt, Rock and Brown Counties to Commonwealth Electric Co., 1901 Y St., Lincoln, $530,000. Bids 11/8.

South Dakota—Rosebud Electric Assn., Gregory, Nov. 15, 391.2 mi. rural distr. lines, Gregory, Lyman and Tripp Counties, from Martin Eng. Co., 104 Broadway, Fargo, N. D. $386,449; Nov. 14, 421.7 mi. rural distr. lines, Tripp Co., from Martin Eng. Co., 104 Broadway, Fargo, N. D., $416,972.

Texas—North Plains Electric Co-operative, Inc., Perryton, 136.4 mi. rural distr. lines and sys. improvs., Ochiltree Co., to W. J. Thomas & Co., Farmers Branch, $140,988; 66 mi. kv transmission lines, Ochiltree Co., to B-Line Constr. Co., 520 First Natl. Bank Bldg., Oklahoma City, Okla., $276,674. H. N. Roberts & Assoc., 1310 Avenue Q, Lubbock, engrs.

INDUSTRIAL, COMMERCIAL & PUBLIC BUILDINGS

Proposed Construction

Md., Baltimore—Westinghouse Electric Corp., Maloney Bldg., Pittsburgh, Pa., 1 story, brick, steel, 400,000 sq. ft. x-ray equip. and electronics mfg. plant, near Friendship Airport. L. S. Houk, Maloney Bldg., Pittsburgh, Pa., owners staff engr.

Tex., Snyder—Sunray Oil Co & Associated Operators, Philtower Bldg., Tulsa, Okla., gas conservation and natural gasoline plant, own forces. Approx. $5,575,000.

Low Bidders & Contracts Awarded

Fla., Cantonment—St. Regis Paper Co., Cantonment, Pensacola, addnl. mill unit, to Merritt-Chapman & Scott Corp., 17 Battery Pl., New York, N. Y., $20,000,000.

Wash., Seattle—City, County—City Bldg., Seattle, Zone 4, 7 story city light bldg. addn. $1,300,000.

C-E REHEAT BOILERS

RIVERBEND STEAM STATION

DUKE POWER COMPANY

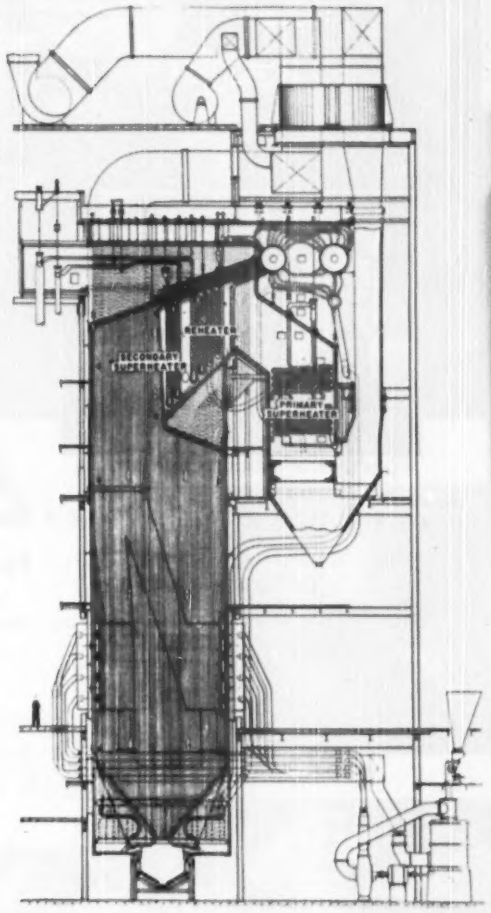
THE C-E Unit illustrated here, one of two duplicates, is now in process of fabrication for the Riverbend Steam Station of the Duke Power Company near Mt. Holly, North Carolina.

Each of these units is designed to serve a 100,000/110,000 kw turbine generator operating at an initial steam pressure of 1250 psi at 950 F. reheated to 950 F.

The units are of the radiant type with a reheater section located between the primary and secondary superheater surface. A finned tube economizer is located below the rear superheater section, and regenerative air heaters follow the economizer surface.

The furnaces are fully water cooled, using closely spaced plain tubes throughout. They are of the basket-bottom type, discharging to sluicing ash hoppers.

Pulverized coal firing is employed, using bowl mills and tilting, tangential burners. B-453

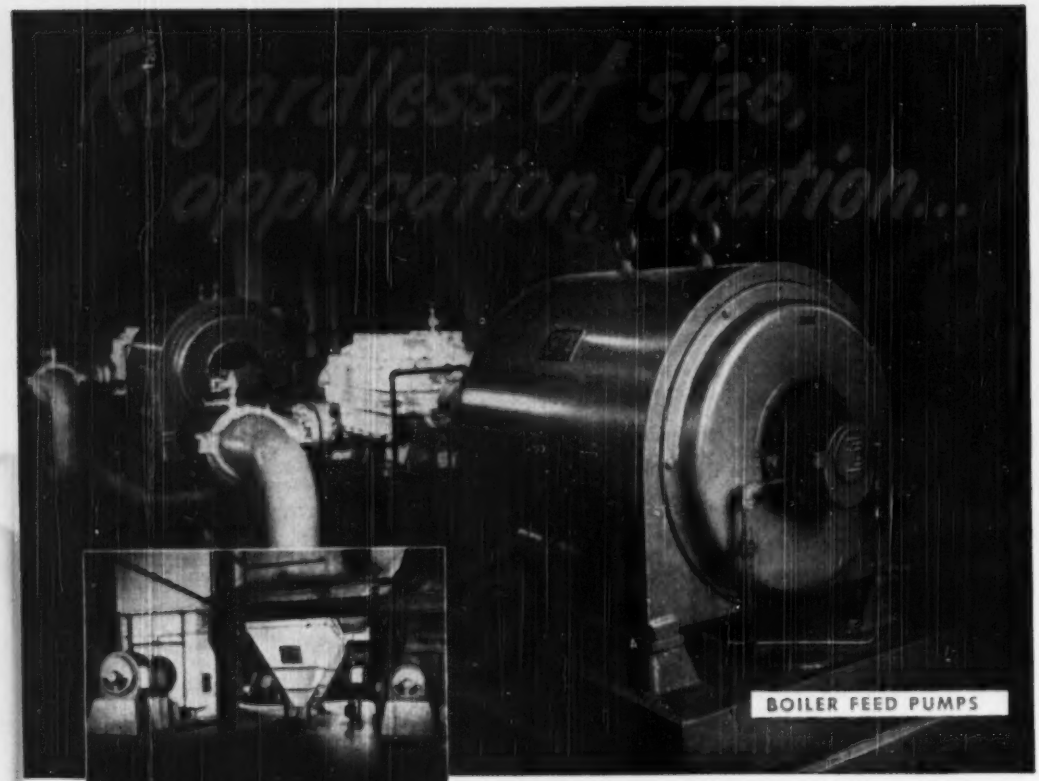


C-E

COMBUSTION ENGINEERING—SUPERHEATER, INC.

200 Madison Avenue • New York 16, N. Y.

ALL TYPES OF BOILERS, FURNACES, PULVERIZED FUEL SYSTEMS AND STOKERS; ALSO SUPERHEATERS, ECONOMIZERS AND AIR HEATERS



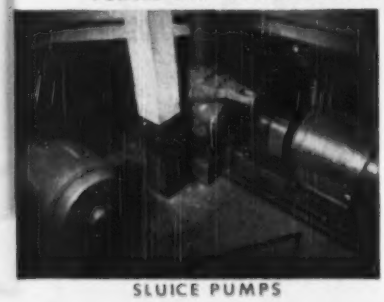
FORCED and INDUCED DRAFT FANS

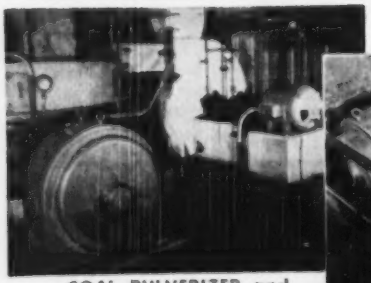
...Elliott motors

for any power plant auxiliary!

Indoors or out, large or small, damp or dry, any conditions can be met by motors from the Elliott line . . . All the photos on this page were made in one station, typical of many plants with whom confidence in Elliott motors is firmly established.

Bulletins on request.


SLUICE PUMPS


COAL PULVERIZER and PRIMARY AIR FAN

ASH PUMPS

L-806

ELLIOTT COMPANY

DEPT. EW

Electric Power Dept. • Ridgway, Pa.

Plants at: RIDGWAY, PA. • AMPERE, N. J.

SPRINGFIELD, O. • NEWARK, N. J.

District Offices in Principal Cities

Here is a big shipment to you of our very best wishes—
that Christmas may bring you the joys
of happy gatherings and renewed friendships—
that the New Year may bring you success and prosperity—
all the good will that we can pack
into the one big wish,

MERRY CHRISTMAS
and
HAPPY NEW YEAR

Our annual Christmas Book, "Christmas Eve with El and Em," is in the mail. We hope you will enjoy having it and passing it on to the younger set.

LINE MATERIAL COMPANY

MILWAUKEE 1, WISCONSIN

Season's Greetings
. . . to the great industry it has been our privilege to serve for thirty years . . . with personal "best wishes" to the men who specify, purchase and install Pinco products, from those who make and sell them.
PINCO
INSULATORS
The Porcelain Insulator Corporation • • • LIMA, NEW YORK

MANUFACTURERS and MARKETS

PARADE OF PROGRESS, industrial exhibit of Minneapolis-Honeywell Regulator Co, illustrates developments in electric, electronic, and pneumatic controls, thermostats, and motorized valves by means of 38 operating models. Tour of 60 cities extending well into 1952 is designed to reach architects, heating and ventilating engineers, contractors, and hospital and school administrators. Above, spectators view demonstration of electric motorized valves with spring return

NPA Slashes Use of Copper, Zinc, Nickel, Relaxes Order on Aluminum

Newest metals cutback orders by Commerce's National Production Authority will mean some hardship cases and generally tight supplies of three metals for electric utilities.

The orders slashed copper use by 15% for January and February and 20% for March, dropped nondefense zinc by 20%, and curtailed primary nickel by 35%. Inventory limitations were set: Copper, brass mill, wire mill, and foundry producers, 45 days' supply, and other users, 60 days' supply; zinc, 45 days' supply; and nickel, 30 days' supply.

Here's how Defense Power Administration officials and other capital observers see the new orders affecting electric utilities.

Copper will not be hit by the order until January—December will maintain November and October levels. But the first quarter will be another story, with electric utilities and other non-"DO" users scrapping for a short supply of copper. The answer for the utilities probably will be individual applications for copper, with DPA working with NPA to see that electric utility expansion programs are not held back.

By the second quarter the best bet is that the electric utilities and other industries will be given industry allotment of copper supplies. DPA will parcel out the industry's share among the utilities. Best hope for electric utility copper supplies is that NPA will limit nonessential uses such as ash trays, etc. Such an order is in the works.

The picture for zinc and nickel is less clear, except that the new orders will hit supplies for electric utilities. Already DPA has some complaints that zinc for galvanizing outdoor equipment is becoming difficult to obtain. Supply of nickel, important in a variety of uses in the construction of steam generating plants, also will be too tight for comfort.

There was more cheering news in aluminum. NPA softened its earlier aluminum order to permit 80%—instead of 65%—of the average monthly consumption of the first six months of 1950 for January, dropping to 75% in February and finally to 65% in March. There will be allocations to industries beginning with the second quarter.

Meanwhile, DPA and NPA have informally agreed that aluminum conductor accessories may be included with aluminum conductor in the exemption granted electric utilities from provisions of the original aluminum cutback order (EW Nov 27, p 3).

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Aluminum Output Boost of 798 Million Lb OK'ed

A new program to boost aluminum production capacity by 798 million lb a year has been approved by the industry and federal officials. Deals have been made by the government buying agency, General Services Administration, with the Big Three of U. S. Aluminum, Aluminum Co of America, Kaiser Aluminum & Chemical Corp, and Reynolds Metals Corp.

Here's the way the new increases shape up:

Alcoa will build a new 220-million-lb plant at an undetermined site and add a 40-million-lb potline at its Point Comfort, Texas, plant. And Alcoa has agreed (EW, Nov 27, p 27) to reactivate plants at Massena, N. Y., and Badin, N. C., with a total capacity of 158 million lb by 1952.

Kaiser agreed to add 200 million lb. Latest indications are most of this will come at one or two new natural gas-fueled plants in the Southwest. The first unit is to be in production by September; the others by April, 1952. Kaiser also will step up output at its Spokane, Wash., plant.

Reynolds will put in 200 million lb of new annual capacity (EW, Dec 4, p 166). This will include 50 million additional lb of capacity at Jones Mill, Ark., and a new 150-million-lb production plant, to be built in Texas or Louisiana if natural gas is available.

The new 798-million-lb program is short of the billion-lb increase reportedly sought by National Security Resources Board Chairman W. Stuart Symington, who also has talked about

boosting aluminum capacity by as much as 2 billion lb. Urged by other officials, however, Symington is settling for the lower figure for the present.

Much of the expansion may be financed without government help, but a three-way assistance program has been offered by federal officials. The three points: 1. Guaranteed sale of the aluminum, either to industry or the government stockpile, 2. Certification for five-year amortization of the new plants for tax purposes, and 3. V-loan guarantees for bank loans needed to finance the additional facilities.

Under the increased production quotas recently worked out Alcoa receives 30%, Kaiser 30%, Reynolds 30%, and smaller companies 10%. One of the last-named, Harvey Machine Co, plans to start building the first unit of a $50-million plant at Rose Crossing, northeast of Kalispell, Mont., this month. Six potlines are planned immediately, with hope eventually of nine. Definite plans depend upon availability of power from Hungry Horse Dam. Montana Power Co will furnish interruptible power until Bonneville Power Administration transmission lines are completed in the area.

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Cobalt, Columbium Lack May Hit Power Equipment

Two scarce, little known materials may be building up big headaches for electrical equipment manufacturers.

Both the materials, columbium and cobalt, have been brought under sharp restrictions by the National Production Authority, and officials of NPA's new Power Equipment Division are afraid the orders may pose a threat to production of certain types of electrical equipment.

Columbium is a stabilizing alloy in some stainless steels. A major power use is in steels for high-pressure and high-temperature boilers and turbines. NPA on Oct 19 ordered that the entire production and use of columbium bearing stainless steels be reserved for defense needs.

Cobalt, best known for its vital role in radio, television, and other electronic equipment, is an alloy in steel for turbine blading and is used for the magnets in watthour meters. NPA directed Nov 21 that nondefense orders be cut to only 30% of the average monthly deliveries for the first six months of the year. All cobalt is brought in from sources abroad, and the directive was contained in a letter to African Metals, Inc, the sole importer of cobalt. A later directive Nov 29 upped nondefense deliveries for December to 50% but limited cobalt inventories to 20-day supplies.

The Power Equipment Division is studying the situation and may recommend that NPA release some of these materials for electrical equipment.

Although columbium and cobalt are the most critical equipment materials under present NPA regulations, other materials rules may bring some hardship cases. The aluminum cutback, for example, has brought a protest from one manufacturer who uses aluminum for the base of watthour meters.

MANUFACTURING BRIEFS

Corning Glass Works plans to build a two-story and basement building at its Central Falls, R. I., plant to double lamp production there. The addition will provide 43,000 sq ft of floor space. About 150 new employees will be taken on, bringing the working force to 750. Planned for completion in January, the addition will be used for manufacture of both incandescent and fluorescent lamps.

Ideal Industries, Inc., Sycamore, Ill., has bought Pyramid Products Co, Chicago manufacturer of wire stripping equipment. All manufacturing and sales activity will be moved to Ideal's Sycamore plant, and Pyramid's "E-Z" Wire Stripper will join Ideal's line.

Production is expected to begin next summer at the new Tacoma plant of Pacific Oerlikon Co. The newly formed (EW, Oct 16, p 28) American subsidiary of Oerlikon Co, Swiss electrical equipment manufacturing company, will turn out various types of industrial electrical equipment. Pacific Oerlikon bought the plant of Tacoma Lumber Fabricating Co.

Electric Controller & Manufacturing Co, Cleveland has moved its Philadelphia office to new and larger quarters in the Times-Medical Building, Ardmore, Pa.

Insulating Materials Sales Index Back Up in August

Sales of electrical insulating materials climbed back in August from their July decline.

The index of sales billed compiled

by the National Electrical Manufacturers Association rose to 466 in August, 26% above July's 370. Sales for the month were 71% above August, 1949, when the index read 273.

SALES ASSIGNMENTS

COMPANY STAFFS

Allis-Chalmers Manufacturing Co, Milwaukee, has opened a branch office at 269 Water St, Augusta, Maine, under the management of D. P. Appleton. Appleton formerly was a resident representative in Portland. Harold S. Millay, service supervisor in the Boston district office, has been made a sales representative in the Augusta office.

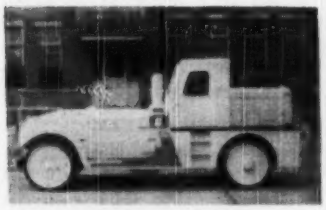
Westinghouse Electric Supply Co has appointed Alfred J. Eaton lamp sales supervisor for the Carolinas district. He will supervise sales of fluorescent and incandescent lamps in North and South Carolina.

Cutler-Hammer, Inc, Milwaukee, has appointed O. P. Robinson manager of the Pittsburgh district sales office. He succeeds T. S. Towle, who is retiring. Robinson also will supervise the Youngstown office.

Metal Prices
Dec 4, 1950

COPPER, Conn. V., lb	$ .24½
LEAD, N. Y., lb	.17
ZINC, prime Western, E. St. Louis, lb	.17½
TIN, Straits qual, N. Y., lb	1.36
ALUMINUM, ingot, base price	.19
NICKEL, base price	.48
STEEL, billets, Pitts., ton	53.00
STEEL, scrap, No. 1 heavy, Pitts., ton	44.00

NEW EQUIPMENT



Pavement Cutter

A new pavement cutting machine is expected to triple the speed and halve the cost of already highly mechanized pavement removal operations. These advantages, in addition to quiet and maneuverable operation, are expected by officials of The Cleveland Electric Illuminating Co who jointly aided in developing the machine.

Pavement can be cut at from 5 in. to 5 fpm, while the machine can travel to the job on four rubber tires at 12 mph. Rate of advance through 8-in. concrete with mesh reinforcement is 1 fpm or more. Cutting elements are two large wheels carrying carbide-tipped bits which will cut dual slots in 15-in. concrete.

The machine can be used day or night, rain or shine. It is powered by a 75-hp gasoline engine, and weighs 15 tons.

Joy Manufacturing Co, Henry W. Oliver Bldg, Pittsburgh 22, Pa.

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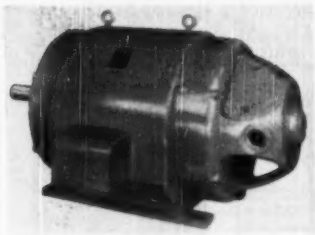

Wound-Rotor Motors

Motors providing variable speed drive comprise a new line of heavy-duty wound-rotor induction motors for applications requiring high starting torque and low starting current, or long acceleration periods. They are built in ratings from 30 to 1,500 hp.

Drip-proof construction is standard on these motors. Splash-proof or enclosed, forced ventilation models are available. Either ball or split-sleeve type bearings are available, the latter type have superfinished journals. Brush pressure is adjusted with a ratchet wheel brush tension adjuster. Cover plates are quickly removable for ease in cleaning. Pictured is a 200-hp, 1,750 rpm model.

Electric Machinery Mfg Co, Minneapolis 13, Minn.

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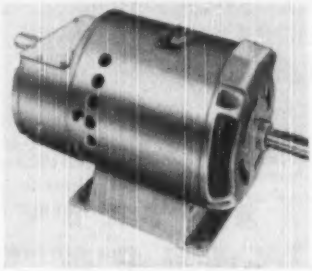

Magnetic-Type Clutch

To the original line of Magneclutches has been added a clutch with two driving members and only one driven member. The two driving members rotate continuously in opposite directions and a simple reversing drive, controlled by energizing the proper excitation coil, is achieved. The Magneclutch line features a dry magnetic torque medium, electrically controlled, and adaptable to remote control.

These transmissions include drives that can be applied to machine tools, auger machines, power shovels, etc.

Vickers Electric Div, Vickers, Inc, 1815 Locust St, St. Louis 3, Mo.

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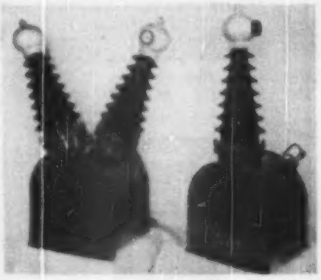
Potential Transformer

Design changes in Type SPW single and two-bushing potential transformer are said to have reduced weights up to 60% in some ratings and decreased dimensions by one-third. Completely



welded heavy-gage steel case results in a heremetically-sealed unit free from breathing. This extends life of the insulating oil.

The complete assembly is dryed and liquid-filled under vacuum. These transformers are available in the 500-va, 60-cycle oil-filled class in 24, 34.5, 46, and 69-kv ratings.

Allis-Chalmers Mfg Co, 932 S. 70th St, Milwaukee, Wis.

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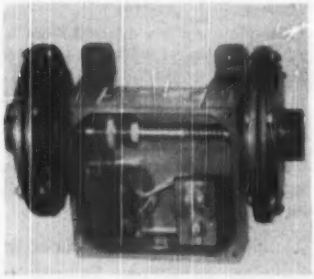


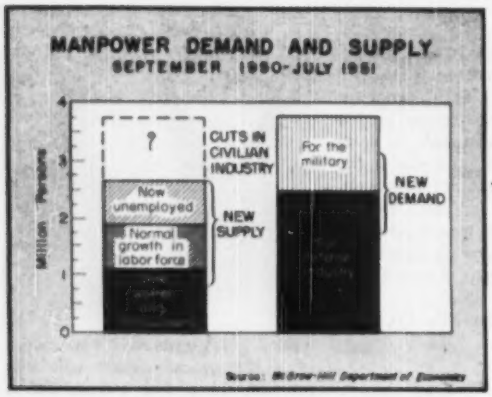
Static Pressure Control

Differential pressure or vacuum control, Cat. 111-D, is designed for use on very low differential pressure where regulation is required in inches of water, either pressure or vacuum, and where a leak path between diaphragm and atmosphere cannot be permitted.

Units are obtainable in standard ratings from 0 to 20 in. of water pressure; nominal fixed differentials vary from 0.2 to 2.0 in. of water. Ratings are 10 amp, 125 v, or 5 amp, 250 v ac.

The Henry G. Dietz Co, Coral Designs, 12-16 Astoria Blvd, Long Island City 2, N. Y.

Electrical Business Outlook



THE DEFENSE PROGRAM may draw as many as 1 million workers away from civilian industries by the middle of next year

Manpower Is Getting Critically Short

A new factor is beginning to dominate the outlook for labor relations: Manpower is getting critically short. The manpower crisis has been sneaking up on us all through 1950. But with materials shortages the immediate worry most people have not realized how close we are to straining our available labor force.

Unemployment has dropped from 4.7 million in February of this year to 1.9 million in October, the latest month reported. Unemployment insurance claims fell nearly half in the brief period from May to September.

Between July and September, labor market areas with a tight or balanced labor supply (under 3% unemployment) increased from 19 to 51. And the number has since mounted.

Occupational Shortages Exist in Major Fields

Important occupational shortages now exist in about a third of our major production centers. These shortages include engineers, machinists, draftsmen, tool designers and tool makers, electricians, mechanics, and repairmen.

So far these shortages are concentrated around the Great Lakes, in the Southwest, and on the West Coast. But they are spreading rapidly to other sections. Even New England, which not long ago had severe unemployment and a large labor surplus, now has shortages in some of the above categories.

All this has happened virtually without direct benefit of the post-Korea war production program. It has been almost exclusively the result of expanding demand from plants making products for civilian use.

Soon the military demand will really get rolling. That will create a new, special demand for skilled labor. We shall need 3 to 4 million more people, in the armed forces and in defense industries, during the next six months to a year. The addition to the labor force expected in this period is less than 3 million. That leaves close to a million workers to be drawn away from civilian industries.

Workers Will Be Harder to Get and Keep

The practical significance of this figuring is easy to see: Satisfactory workers will be harder to get and harder to keep as 1951 wears on. In areas where the shortage has already hit, employers are raising wages, offering more fringe benefits, and revising their hiring practices to meet the situation.

From the standpoint of business planning, it makes little difference whether the manpower crisis strikes early in 1951 or a few months later. The fact of the matter is that business will face a relative shortage of manpower for some years to come.

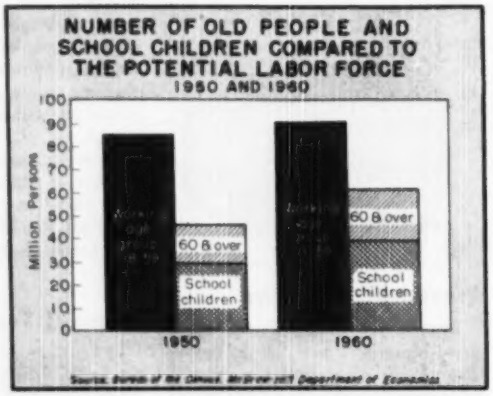
This is made clear by statistics on the changing age composition of our population:

From 1950 to 1960, the working age group (18 to 59) is expected to increase only 6%.

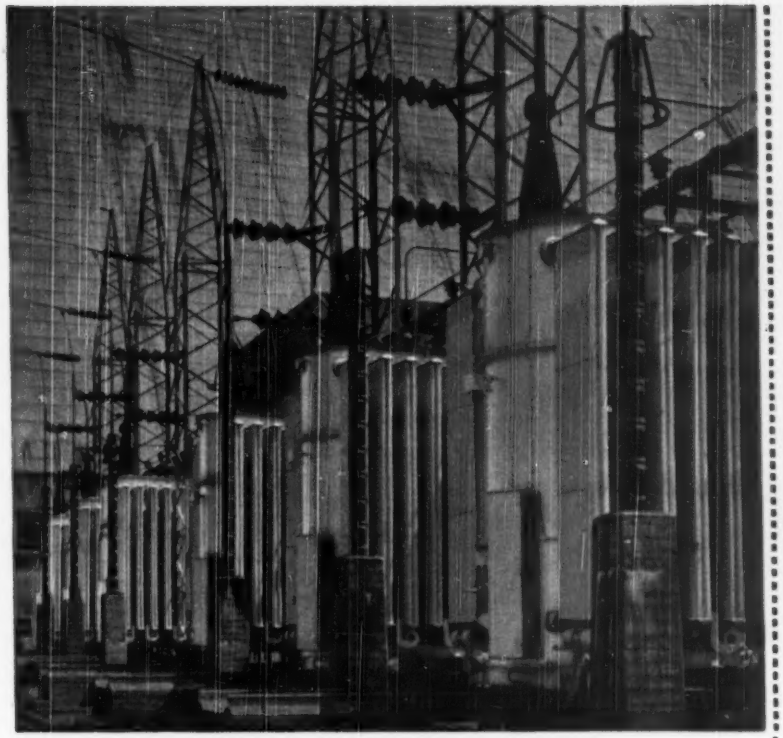
In the same period, the number of children in school is expected to increase about a third. And the number of persons over 60 is expected to increase almost as much.

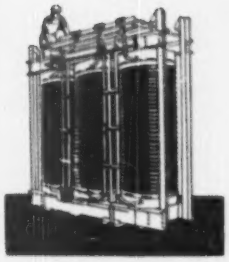
Thus we'll have a much smaller labor force relative to the number of children and oldsters who must be supported. The nation will have greater needs—peace or war—but very few more people to turn out the goods.

These facts about population won't change with the international picture. They mean getting the very most out of the available labor supply for a long time to come.

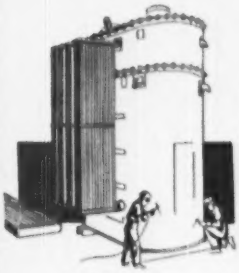


DEPENDENTS—those too old or too young to work—make up an increasing section of the population and put even further strain on the actual labor force of the country

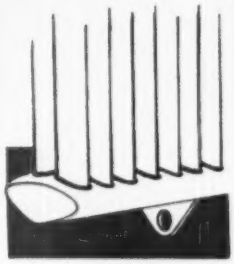




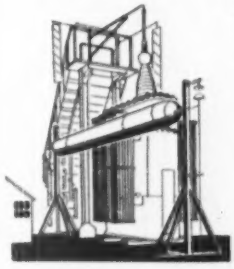
Core and Coil Construction



Tank Construction



Radiator Construction



Transformer Testing

MOLONEY FEATURES SAVE YOU MONEY!

The features that are built into every Moloney Power Transformer are the result of years of exhaustive study and research. Research that is based on records of results actually obtained . . . on more efficient operating performance and lower maintenance costs.

Take, for instance, Core and Coil Construction. Core type construction is used, providing a maximum amount of winding surface exposed to the oil to assure efficient dissipation of heat. To insure the greatest possible protection against distortion under the most severe operating conditions, windings are rigidly braced.

Tanks are made of high grade steel, electrically welded, with Z bars or box-type reinforcements . . . Radiators are of all-welded construction with tubes spaced in a double row for easy cleaning and painting. There is no "hard-to-get-at" center row. All welds are external. Headers are designed so that water cannot collect and cause rust.

These and other features, all tested to meet the most rigid specifications for "on-the-job" performance, have been developed and improved in more than half a century of exclusive transformer manufacturing and are your assurance of *savings in dollars* . . . when you use Moloney Power Transformers.

Illustration above shows a Moloney Power Transformer installation: 168,000 Kva of installed capacity, transforming 13,800 to 161,000 volts.

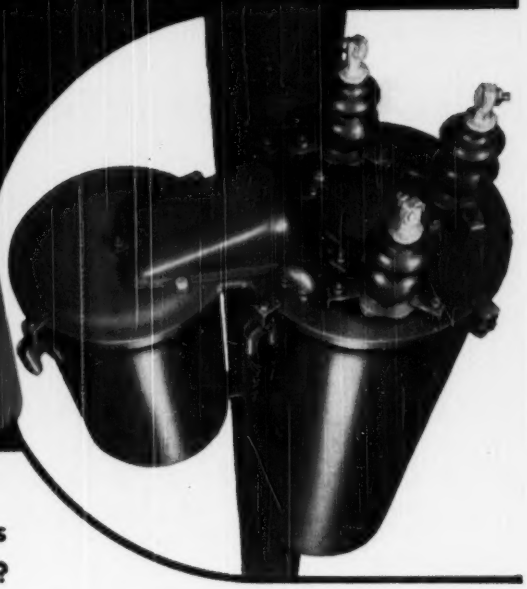
. . . OVER 50 YEARS OF LEADERSHIP IN DESIGN, RESEARCH, ENGINEERING

MOLONEY ELECTRIC CO. ☆ ST. LOUIS 20, MO.

POWER AND DISTRIBUTION TRANSFORMERS EXCLUSIVELY SINCE 1896

STOP

Annual Revenue Losses OF $4 TO $8 PER CUSTOMER!



Why go on losing money on lines with so-called "adequate" voltage?

YOU MAY THINK 105v or 110v is "adequate." Lights work, motors run, stoves heat, and radios play. But they aren't operating at their rated voltage. Users are affected in many ways. Motor life is shortened . . . light bulb efficiency is low . . . heating is slow. Users are losing money whether they know it or not!

And operators are losing money too! Low voltage means power consumption is reduced . . . hence revenue is lower than it should be. *It costs money not to regulate voltage.*

But there's a big difference in regulators. A regulator that holds a narrow 2 volt band can maintain average voltage 1 volt higher than one holding a 4 volt band. Only Allis-Chalmers builds a pole type step regulator that can hold a 2 volt band.

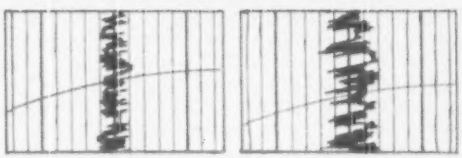
You can use the band width advantage in three ways:

1. You can increase revenue.
2. You can increase load carrying capacity.
3. You can extend feeder length.

Every day you wait to correct low voltage you are losing money. Call your nearby Allis-Chalmers Sales Office now. See what regulators can do for you. A-3199

ALLIS-CHALMERS, 932A SO. 70 ST.
MILWAUKEE, WIS.

Judge a Regulator by the Band Width it Holds!



2 volt band **4 volt band**

The Allis-Chalmers pole type regulator is the only pole type step regulator that can hold a narrow 2 volt band. Use the band width advantage of this regulator to hold higher average voltage. Get quicker return on dollars invested in regulation.

ALLIS-CHALMERS

Originators of 5/8% Step Regulation